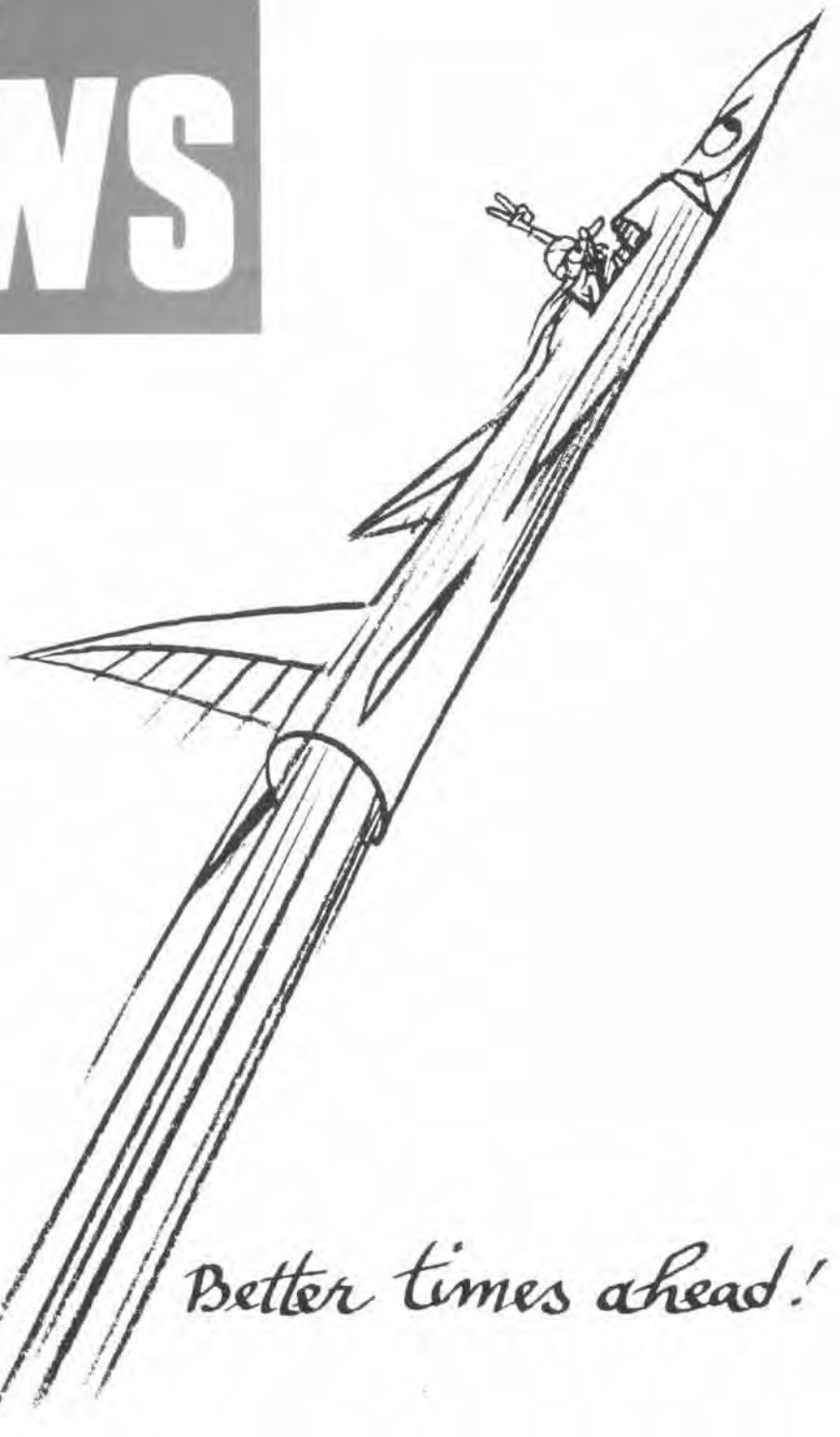
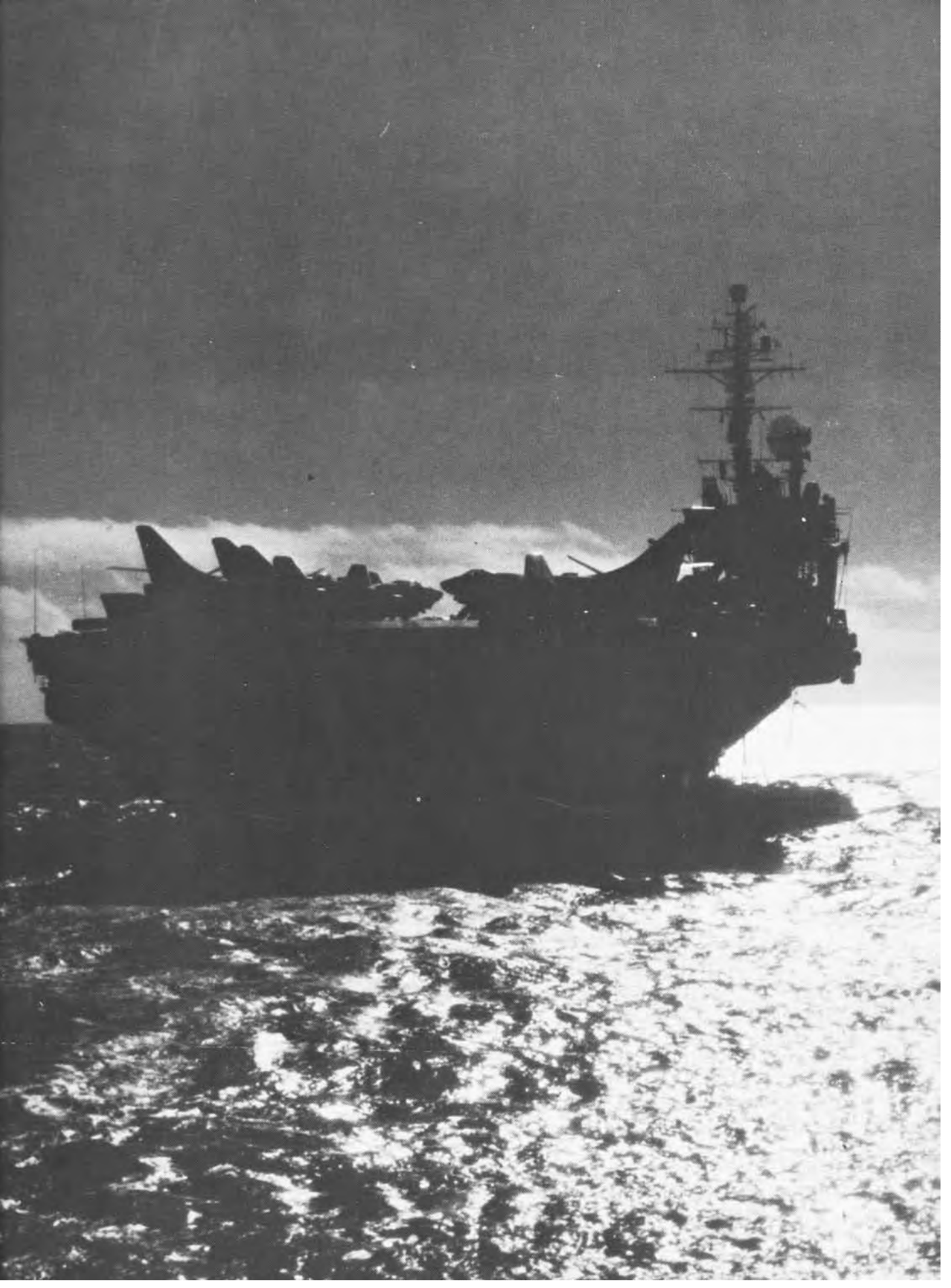
NAVAL AVIATION NEWS



JANUARY 1973

30 YEARS OF GRAMPS



NAVAL AVIATION NEWS

FIFTY-FIFTH YEAR OF PUBLICATION

THE STAFF

On the cover, Gramps, the eternal optimist even after thirty years (page 7), kicks off the New Year with an assist from Robert Osborn. At left, a sunrise silhouettes USS Constellation (CVA-64) as she takes part in a refueling exercise with USS Carpenter (DD-825) off Oahu. On the back cover, PH3 Montie Talbert III caught a VF-14 plane captain aboard USS John F. Kennedy (CVA-67) during a lull in flight deck operations.

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EDITOR'S CORNER

Last month marked the 55th anniversary of *Naval Aviation News*. While a continuous lineage can be traced to the CNO(Aviation) *Weekly Bulletin* of the WW I era, the changes in title and sponsoring agency have varied over the years. When Naval Aviation expanded beyond a single airfield at Pensacola to meet the requirements of World War II, it became necessary to find a means of maintaining an exchange of information that had been direct and informal when the Navy's tiny aviation establishment was all at the same station. The new publication reported the progress of a growing Naval Aviation organization, telling of the number and training of new personnel, aircraft acquired, and giving information as to events in the aerial war in Europe in its eight to ten mimeographed pages.

With the end of the war, the publication increased its frequency and reduced its size to three to four pages as the *Daily Aviation News Bulletin*. It contained regular features headed: General Information, Recruiting, Operations, Fleet Aviation, and Experiments and Tests. In 1923 the Bureau of Aeronautics took over responsibility for publication and, with this change, it became the *Weekly News Letter* averaging eight mimeographed pages which discussed such events as participation in air races or smoke-screen-laying experiments on the Anacostia River, along with reports of Naval Aviation's activities in fleet maneuvers and the developments taking place in naval aircraft and airships. In 1927, as the *Bureau of Aeronautics News Letter*, it had grown to 12 pages and was reporting squadron activities and the operations of the Navy's new aircraft carriers, *Saratoga* and *Lexington*.

The next major change came in May 1935 when it became a biweekly classified Restricted. In December that same year, the first illustrated cover appeared, a drawing of a PBY flying above *Lexington* as aircraft were being launched. Funds no doubt being tight, that cover was retained until the following June when it was replaced by the first photograph on the cover, three F2Fs in formation. Again, the same cover illustration was retained for several months until replaced by a photo of *Lexington* and *Ranger* steaming astern of *Saratoga*. This also marked the first use of a color other than black and white on the cover – a peculiar shade of blue. Thereafter, the cover illustration was changed about every three months. Meanwhile, the publication had grown to 36 pages.

The June 1, 1937, issue featured the first inside use of an illustration, a line drawing accompanying a discussion of the effect of tightly banked turns on stalling speed. In January 1941, to aid readers in distinguishing between issues in a series bearing the same cover photo, each issue was printed with different tones of color – blue, green, brown, red, gray, etc. After nearly a year of U.S. participation in WW II, the November 1942 issue introduced the tradition of a different illustration for the cover of each issue. Still a biweekly, the publication had by now grown to 48 pages with a few photographs on inside pages. It also added a new feature – Grampaw Pettibone!

February 15, 1943, marked the first true magazine format – slick cover stock and increased use of photos inside. The evolution of the magazine was rapid thereafter. The following April, internal improvements included dropping the typewriter typeface used until this time and the adoption of letterpress text and headline type faces. The familiar white on red title on the cover first appeared in August, but as *BuAER News*. It wasn't until September that the title finally became *Naval Aviation News* when the publication once again became a function of the Chief of Naval Operations.

With the end of WW II, *NANews* became a monthly publication in November 1945. Since that time, various changes have taken place in internal format and printing process, but the magazine has maintained its essential form from that period to the present. One major innovation was introduced in October 1968, the first four-color cover, a feature we hope to continue at more or less regular intervals to emphasize significant issues, events or anniversaries.

NAVAL AVIATION NEWS

1911 1973

VT-23 Switches to T-2C Buckeyes

NAS KINGSVILLE, Tex. — VT-23 entered a new era in October as it implemented its part in phase three of the single-base concept by establishing basic jet training. It was a big transition for the previously advanced jet training squadron, with preparations beginning early this summer.

Under the single-base concept, jet aviation students will receive all necessary flight training at one air station, rather than transferring from one training base to another. Upon completion in 1974, the plan will provide for a more effective use of personnel and material at a substantial savings for the Naval Air Training Command.

While completing the last class of TA-4J students, the squadron began to receive the T-2C *Buckeye* basic jet aircraft in early September. To prepare maintenance personnel for the new aircraft's upkeep, academic and on-the-job training was conducted by other squadrons that have used the *Buckeye*. In a five-day course, the men gained technical knowledge in the aircraft's power plant, electrical system and in other maintenance areas.

To further prepare for the implementation of basic jet training, selected instructors attended academic training at NAS Chase Field where they learned the T-2C systems and received transitional flight training in the basic aircraft. These instructors in turn trained other VT-23 instructors.

The first students in the basic jet training program at VT-23 arrived October 2. They began basic training at NAS Meridian and had completed various phases of training by the time they were transferred.

New students will come into the program from VT-1 at NAS Saufley Field, where they will have received introductory flight training in the T-34. At VT-23 the training syllabus is divided into eight stages. Besides classroom lectures, the 21-week course affords each student 84 hops in the T-2C, involving approximately 120 hours of flight time, familiarizes him with the standard jet gunnery pattern and prepares him for initial solo carrier landings. When the students complete this training, they are transferred to VT-21 or VT-22 at NAS Kingsville for advanced jet training in the TA-4J *Skyhawk*. Upon successful completion of this portion of their training they are designated Naval Aviators.

TA-4Js for VT-24

BEEVILLE, Texas — VT-24, NAS Chase Field, recently completed its transition from the TF-9J *Cougar* to the TA-4J *Skyhawk* when the last F-9 was transferred to VT-25.

VT-24, originally established July 1, 1954, as Aviation Training Unit 203 and designated VT-24 in May 1960, has trained 1,579 aviators while accumulating almost 300,000 hours in the TF-9J.

Test Pilot Reunion

PATUXENT RIVER, Md.—The Naval Test Pilot School has announced May 5, 1973, as the date for its 25th annual symposium and reunion at the Naval Air Test Center. Each year the symposium includes addresses by authorities on aeronautical subjects.

The school, one of only four in the free world, trains experienced aviators, naval flight officers and engineers as engineering test pilots and test project engineers.

Graduates are assigned to the research and development, and test and evaluation arms of all four services.

New Harrier Squadron

BEAUFORT, S.C. — Marine Attack Squadron 542, the second AV-8A squadron, was officially activated at the Marine Corps air station on November 1, 1972.

With the activation of the unit, the Marine Corps has another squadron of the versatile V/STOL jets. The first squadron, VMA-513, is also stationed at MCAS Beaufort.

Lieutenant Colonel Eugene B. Russell is C.O. of the new outfit.

Groundbreaking for New Pensacola Museum

PENSACOLA, Fla. — Groundbreaking ceremonies were held recently for the Naval Aviation Museum in Pensacola. Construction of the first phase of the museum's permanent new home is expected to be completed by the end of the year.

The museum is presently housed in a rehabilitated, temporary wooden building. The new building will contain seven times the present usable floor area, or approximately 65,000 square feet. When all phases of construction are completed, it is anticipated the museum will consist of more than 250,000 square feet of space filled with exhibits, full-size aircraft, scale models and paintings.

At the NATTC Memphis Advanced Avionics School, Senior Chief Radarman Larry H. Nowell, the Ace air intercept controllman credited with 12 MiG kills (NANews, September 1972, p. 5), answers students' questions. The MiG Man received his early radar training at a NATTC Memphis school.

HSL-30 Deployment

LAKEHURST, N.J. — The first West-Pac deployment of an HSL-30 detachment ended on October 26 when a LAMPS H-2 *Seasprite* of Det 4, *Hard Charger 15*, touched down at NAS Lakehurst.

During its deployment in the Gulf of Tonkin, embarked aboard USS *Biddle* (DLG-34), the detachment logged 711.6 hours, 437.7 of them between July 4 and September 21. It made the first overwater rescue by a LAMPS helicopter when a detachment crew recovered Capt. A. S. Dudley, USMC, who had ejected from his F-4 *Phantom*. At the time of the rescue alert, *Hard Charger 15* was secured in its hangar aboard *Biddle* and the crew was in an off-duty status. Within ten minutes, the helo was airborne and en route to the scene, crewed by Lieutenants C. D. Nelson and T. J. Corcoran as pilot and copilot, AT1 R. L. Daniel as radar operator and AWAN S. T. Mayo, hoist operator. The LAMPS crew updated their initial vector with UHF/ADF radar equipment which homed in on the pilot's survival radio and spotted him before visual contact was made, and an uneventful rescue (as if any rescue is really uneventful!) followed.

LCdr. F. M. Dirren, Jr., is officer in charge of the detachment.

Last 1312 Officer

NAS PENSACOLA, Fla. — A chapter in Naval Aviation's history ended recently with the retirement of LCdr. Walter E. Coupe. Coupe was the last man on active duty to hold the 1312 designator assigned to enlisted pilots who were commissioned temporary officers.

Prior to his retirement, LCdr. Coupe, who calls himself "strictly a transport man," served as pilot for Vice Admiral Malcolm W. Cagle, Chief of Naval Training. During the past six years, he logged 5,000 hours and nearly half a million miles in the same C-131 *Convair Liner*.

Coupe enlisted in the Navy in 1942 and was an aviation ordnanceman second class when he was accepted for flight training in 1944. After flight training he was commissioned an ensign, but during the tight-money, postwar years was reverted to the enlisted status of aviation pilot first class.

In 1955, he once again had the opportunity for a commission and became an ensign for the second time in his career.

"The years from WW II to the present have brought about a complete metamorphosis," he says. "With the advent of the jet engine, the whole face of Naval Aviation changed. When I was learning to fly, we had a navigational aid we called the 'Iron Airway.' We'd simply follow railroad tracks from city to city, and only crazy mail pilots flew above the clouds."

Coupe has flown a variety of naval aircraft and most of the patrol planes, including the famous *Catalina* and *Mariner* flying boats.

After his final flight as a Naval Aviator, LCdr. Walter E. Coupe steps from the C-131 Convair Liner he has flown for six years.

RP-3D Record

PATUXENT RIVER, Md.—The Navy, on November 4, claimed a world record in the heavyweight, turboprop class in a nonstop flight from the

Naval Air Test Center to the magnetic north pole and back.

An RP-3D, the Navy's newest oceanographic research aircraft, flew a nonrefueled distance of 5,461 nautical miles to better the existing closed circuit distance record held by a Soviet-built IL-18. Russia holds the closed circuit record for a 4,332.14-nautical-mile flight on June 19, 1969.

The record flight was a scheduled test hop to gather data for Board of Inspection and Survey acceptance trials currently under way on the Lockheed RP-3D which is configured to investigate the earth's magnetic field. The new aircraft is expected to replace Project *Magnet's* C-121 at the conclusion of BIS trials.

Leaving the test center at midnight on November 3, the bright orange and white *Orion* flew due north along the east side of Hudson Bay 2,450 miles to the magnetic north pole. Turning back, it skirted the west side of Hudson Bay to Duluth, Minn., then turned east toward NATC for the remainder of its 16.5-hour flight.

The RP-3D was piloted by Commander P. R. Hite, BIS project pilot and head of the Service Test Division.

The flight was conducted in accordance with Federation Aeronautique Internationale rules in cooperation with the National Aeronautic Association. NAA must verify the record before it is official.

GRAMPAW PETTIBONE

The Last Roll

Two Marine Aviators in a TA-4F completed the second leg of their cross-country flight at a southwestern AFB. Two A-4Ms from another Marine squadron were also remaining overnight at the same AFB. The pilot in command of the TA-4F, Capt. Little Experience, and the flight leader of the two A-4Ms, Capt. Break Therules, had been friends for many years. That evening, at the officers club, a decision was reached that the TA-4F would accompany the two A-4Ms on their low level navigation flight the next day.

The following morning, the four pilots met at operations; Capt. Break Therules briefed the flight and filed a flight plan. Start, taxi and takeoff were normal. The flight proceeded to a published entry point for the route. At the initial entry point, a 360-degree right turn was executed to descend to the proper altitude and then accelerate to the proper cruising speed. During this turn, Capt. Little Experience, overtaking the other two members of the flight, executed a barrel roll at 2,000 feet to slow his aircraft. During the roll, he allowed the nose of his aircraft to fall through and scoop out. Capt. Break Therules observed the maneuver and broadcast that this would not have happened if Capt. Little Experience had used top rudder. One of the other pilots answered back that "they were a little too heavy for that anyway."

The flight proceeded with the low level to a point just short of the next checkpoint. Then they checked the weather of three local military fields by radio. Two were reporting winds out of limits for the A-4M and TA-4F.

Capt. Break Therules instructed the flight that the route would terminate at the 57-minute checkpoint and divert to the field reporting the best conditions. At this time, the positions of the three aircraft were: an A-4M leading at 500 feet altitude; Capt. Break Therules on his right, 2,000 feet behind and 500 feet stepped up; Capt. Little Experience to the left and generally in the trail of the leader.

Capt. Break Therules started to cross to the left of the lead and accelerated to facilitate join-up prior to

proceeding to the airfield. Capt. Little Experience's angle of bank was excessive and, as he passed behind Capt. Break Therules, he started to reverse the turn while still descending.

The roll to the left continued to the near inverted position with positive G loading applied. The pilot in the back asked Capt. Little Experience "what the heck?" A snap roll to the right with full aft stick was then executed in an attempt to recover. By this time, the aircraft was approximately 200 feet AGL, in an incipient stall condition, still descending.

The pilot in the back ejected at an altitude of approximately 50 feet with a sink rate of 100 to 200 feet per minute and the aircraft in a ten-degree nose-up attitude. There was no apparent attempt to eject by the pilot in the front seat. The command ejection control was set for front seat command only — in accordance with squadron SOP. The aircraft impacted a wooded section of a hill with approximately a 20-degree slant. Initial impact was near the bottom of the hill, and the aircraft continued for 2,700 feet as it disintegrated. The pilot received fatal injuries.

Grampaw Pettibone says:

Sufferin' succotash! What a waste — I got so goldanged mad when I read this here report, particularly when one endorser tried to "sea lawyer" the work of the accident investigatin' team. Sure there were some errors in the accident report but, as one gent put it, "They did not substantially alter the facts." Bravo!

This whole mess "reeked" of supervisory error — including the flight leader and the supervisor of our passed-away cocky pilot. What in tarnation goes on in the mind of a young lad who executes a roll at a low altitude when he has had only three hours in type in the last 90 days! There is just no way we can legislate against stupidity. I can't go on, my ulcer hurts!

The Knowns and Unknowns

Two pilots arose at 0700 for an 0900 departure to return to their ship. They had diverted the previous evening because of a cockpit lighting discrepancy in one of the F-8s. The *Crusaders* were scheduled to fly back to the ship as a two-plane section led by a lieutenant commander with a lieutenant as the wingman. Following brief, filing, preflight and start, the aircraft taxied to the head of the duty runway for takeoff.

After receiving the wind information, which indicated a slight right crosswind, the *Crusaders* lined up on the runway with the wingman on the right side of the leader. The section leader briefed for a 1,000-foot interval between aircraft on takeoff roll. At approximately the 3,000-foot runway marker, witnesses observed the wingman's aircraft landing gear either collapse or retract. The markings on the runway indicated that the vertical fins and underside of the fuselage made contact with the runway surface at 3,270 feet.

The *Crusader* continued skidding along the runway, shearing the arresting cable and then catching fire. The pilot initiated ejection shortly thereafter and was fatally injured. The aircraft became airborne, made a gentle left climbing turn and impacted the ground 1.5 miles southeast of the airfield.

Investigation revealed the cause of the accident to be premature retraction of the landing gear. Additionally, the pilot's fatal injury was attributed to his torso harness not being attached to the parachute!

Grampaw Pettibone says:

Jumpin' Jehoshaphat! What a needless loss of life and flyin' machine. Many a birdman has gotten away with one mistake in the flyin' game — but two, in this case, was one too many. Not fastening your harness to your parachute and then bringin' the "rollers" up early can ruin your whole day!

Doin' a little checkin' with the Safety Center, I found we've had five *known* instances of pilots ejecting without having their upper Koch fittings attached! Are you one of the "unknowns" who haven't yet had to eject? Your days are numbered.

ILLUSTRATED BY Osborn

30 Years of Gramps

With this issue, the Sage of Safety begins his thirtieth year in the pages of *NANews*, remaining by far our most popular feature.

Gramps was not a young man when he took the job and each year has taken its toll. Who is to say whether his beard is a little thinner because of his age or because of his occupation. His caustic remarks can cut to the quick, but his praise of a job well done in moments of stress, while not lavish, always gets right to the point.

And the point is always well illustrated by the art of Robert Osborn.

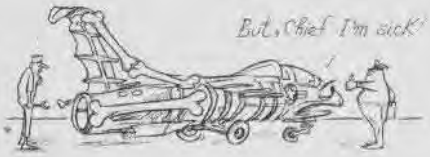
In 1942, at the flight statistics desk of BuAer sat Captain "Seth" Warner who wondered, "Why are so many of the stupid accidents alike and why are so many of them so stupid, 100 percent pilot error?" Searching for a way to spread the word, he thought of "the oldest living Naval Aviator" as a means of getting that word to the fledgling aviators. With Robert Osborn, a Reserve lieutenant and an illustrator, the idea became a reality.

Gramps was introduced in the January 15, 1943, issue with these words: "Gentlemen, meet an old-timer, P. S. (Post Script) Pettibone, long since retired but now back in parachute harness. He started flying back in the days when airplanes were built out of cigar boxes and baling wire . . . and a successful landing was anything you could walk away from. . . .

"Grampaw is still a rabid aviation enthusiast, particularly where Naval Aviation is concerned. He has had more close calls and experiences than Eddie Rickenbacker and Dick Tracy combined."

Little did the captain and the lieutenant realize they were creating a crusty character who would become a mentor for generations of Naval Aviators.

Gramps' survival is a tribute to the two men who created him. Nine Gramps have followed Capt. Warner to sit in the ol' man's seat, but there has been only one Osborn whose devotion to safety in Naval Aviation training remains undiminished.



NEWS LOOKS BACK

the armed

You might have read about it in *Naval Aviation News* last January in an article by LCdr. Paul Mullane entitled "The Smart and the Dumb." Or you might have seen it on the tube last summer, the flickering, grainy screen showing the outline of a bridge in North Vietnam. As the announcer informed you that the transmission was from a "smart bomb," the image of the bridge zoomed in larger and larger until the last thing you remember seeing was that small rivet on that simple girder. And then, nothing. End of transmission. The target was hit.

The media picked up "smart bomb" and added it to their lexicon of Vietnam-era military terminology. Smart bombs were news. But they weren't born yesterday.

They evolved and the evolution began with a strange marriage between the aeroplane, explosive ordnance and remote guidance systems.

From the earliest days, this marriage was known by a number of names: flying bomb, aerial torpedo, assault drone, explosive carriers, aerial rams, guided bombs, controllable bombs, etc. Many even called them guided missiles, which they were if one accepts the definition of guided missile as an unmanned vehicle traveling above earth's surface, guided to a target by remote command signals, sensor equipment from within, or a combination of both.

But there is a difference between these flying bombs/aerial torpedoes/assault drones, or whatever name you choose to call them, and the guided missile with the flaming tail, as we came to know it from 1942 on. The former were armed, pilotless aircraft, bearing little or no resemblance to the latter with its sleek long lines and phenomenal speeds. And it is about the former and their brief but interesting history that this story is told.

The idea came about almost with the first flight at Kitty Hawk, N.C., on

ROBOTS

By Michael McDonell

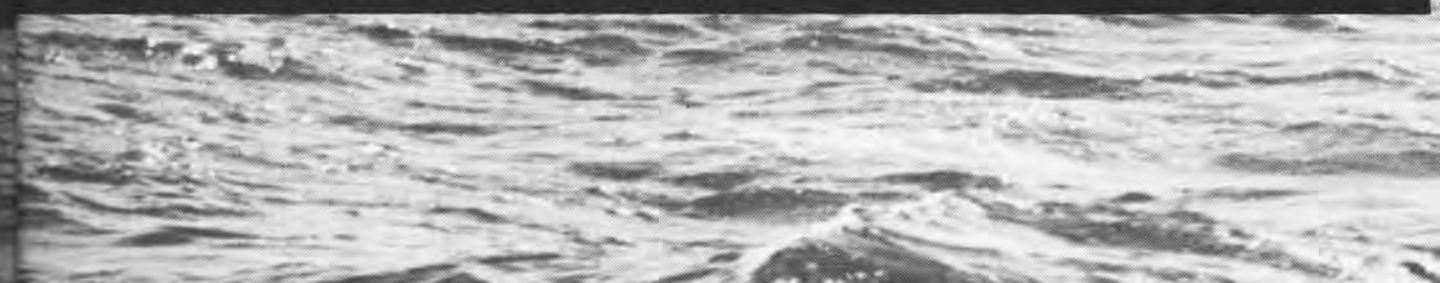
December 17, 1903. While many optimistically hailed the aeroplane as the eliminator of frontiers, the vehicle which would dissolve nationalism and promote the "world nation," others more pragmatic eyed war clouds on the horizon and made other plans for aeroplanes.

With the outbreak of war in Europe in 1914, the aeroplane made an awesomely spectacular debut. Its bellicose possibilities soon gave birth to an idea: an unmanned aeroplane, a self-propelled missile, a "flying bomb."

In October 1915, Secretary of the Navy Josephus Daniels established the Naval Consulting Board to advise him on scientific and technical matters and to provide "machinery and facilities for utilizing the natural inventive genius of Americans to meet the new conditions of warfare." Under the auspices of the board, a Committee on Aeronautics was formed. It numbered among its members the inventive genius Elmer A. Sperry, head of the Sperry Gyroscope Company and an expert in gyrostabilization. Sperry and his son, Lawrence, had worked with the Navy before, supplying gyroscope equipment for torpedoes in the early years of the new century and, later, conducting a cooperative test and evaluation of his gyrostabilization mechanism on a Navy flying boat.

Six months prior to the formation of the board, Dr. Peter Cooper Hewitt, another well known inventor, approached the Sperrys with an idea for an "aerial torpedo," an unmanned aircraft that would carry lethal loads considerably further than the ordnance expelled by any earthbound gun. His electronic expertise, Hewitt reasoned, coupled with the Sperrys' gyrostabilization experience, would assure their success. And to make the proposition even more enticing, Hewitt agreed to finance the project and contributed the sum of $3,000.

Father and son agreed; the work



NEWS LOOKS BACK

Right, billed as "The world's first guided missile," N2C-2 is put through its paces by VJ-3 sometime during the late Thirties. Marmon car is used as the test vehicle for Sperry Flying Bomb. Below right, TDR-1 over Naval Aircraft Factory.

began; Hewitt's fund was quickly depleted and the Sperrys found themselves financially involved in the project. It was at this time that the elder Sperry and Hewitt were appointed to the Naval Consulting Board. As inventors and as members of the Committee on Aeronautics (Sperry eventually became its chairman), the two men found themselves in the position of trying to stimulate the Navy's interest in their project while, at the same time, evaluating similar winged missiles by other inventors.

By the summer of 1916, Hewitt and Sperry had persuaded the Bureau of Ordnance to send a representative, Lt. T. S. Wilkinson, to inspect their aerial torpedo at their Brooklyn plant. The lieutenant was shown an aircraft in which was installed a device consisting of a gyroscopic stabilizer, a directive gyroscope, an aneroid barometer to regulate height, aeromotors to control rudders and ailerons, and a mechanism for distance gearing. This aircraft, the inspector was told, could be catapulted or flown from the water, would reach a predetermined altitude, fly a predetermined course and distance, and would drop its bombs or crash onto the target. All of this, he was assured, without benefit of a human pilot.

Wilkinson was unimpressed, judging that the device was not accurate enough to hit a ship. However, because of its range of between 50 and 100 miles, he could foresee an interest by the Army. But the naval officer overestimated the Army's enthusiasm. They did not reply to Sperry's invitation to inspect his new device.

For six months there was little interest in the project and even Hewitt appears to have lost interest in it.

The United States' declaration of war against Germany quickly brought this period of limbo for the aerial torpedo to an end.

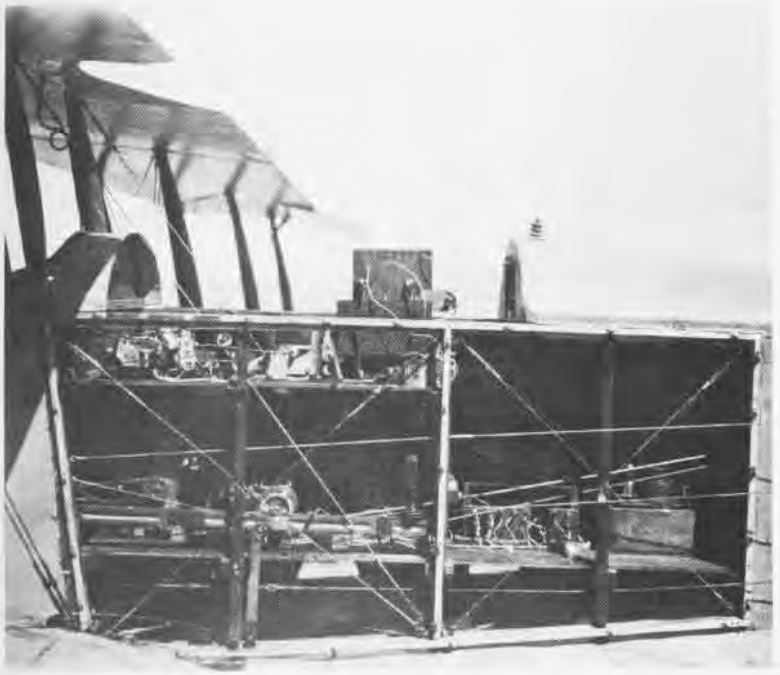
Five days after the declaration, on April 11, Sperry, acting as chairman of the Committee on Aeronautics, submitted a favorable report on the aerial torpedo to the consulting board, which concurred, passed a resolution, and apportioned $50,000 to carry on experimental work.

In May, the Navy agreed to provide five N-9 seaplanes and purchase six sets of Sperry automatic controls.

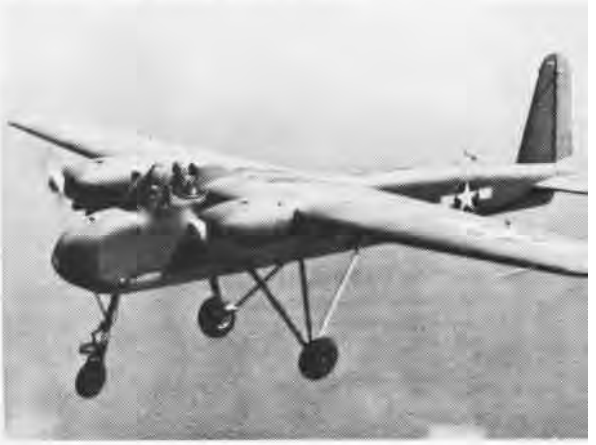
The work began. Confident that his automatic controls would function according to plan, Sperry began the development of the radio control gear with the help of a radio engineer. Unfortunately, Sperry's radio-control experiments met with no success as they were never incorporated in the flying bomb, as the Navy dubbed the project.

The initial phases of the project, besides the radio work, consisted of testing and perfecting those mechanisms which dealt with maintaining course and distance. Test flights began in September 1917 with a pilot at the controls during takeoff. But two-mile errors made the weapon useless against ships and the Navy pondered what to do about the project. CNO decided that, while the flying bomb would continue to be developed for production, the Navy could no longer provide the project with new engines and airframes. Project members were left with the task of obtaining needed parts without interfering with wartime aircraft production.

With the armistice, the flying bomb became the "never never weapon" of WW I. In 1919, Sperry was no longer involved in the program; it had been reoriented. For the next 20 years, development work would be carried out



Inside view of automatic pilot and radio control equipment installed in N-9 seaplane at NAS Dahlgren, Va., November 1924. Below, with human pilot at controls, TDN assault drone is tested.



and controlled by naval officers and the Navy Department. Testing of the flying bomb was transferred to the Naval Proving Ground at Dahlgren, Virginia.

In 1922, the Naval Research Laboratory, together with BuAer and the Bureau of Engineering, began working with radio-controlled flight. With an effective range of approximately ten miles, a radio control set was installed in an N-9 in mid-1923 and flight tests began. By November, 33 successful flights had been made but always with a human "safety" pilot aboard in case the system should fail. It was not until September 1924 that a pilotless flight was attempted.

It lasted 40 minutes and while the radio control was not perfect, the aircraft could be directed to turn left and right, to ascend and descend. Unfortunately, while attempting to land, the plane struck the water hard, bounced back into the air, settled once more upon the water and sank because of a damaged float. A second attempt was made over a year later but the aircraft crashed on takeoff. In spite of the successful 40-minute flight, the crashes eclipsed the accomplishment of radio control and the project was allowed to die. After a period of several years, experimentation was resumed briefly in 1932, only to be shelved once more because of lack of funds. But that would shortly change.

Dive bombing and, with the development of the Norden bombsight, high-altitude horizontal bombing were being touted as effective tactics against ships. Yet, antiaircraft training remained primitive. Planes towing target sleeves on prescribed courses and altitudes offered high scores to gunnery departments but little realistic training.

It was because of this deficiency that the radio-control program received a much needed boost in 1936. CNO, Admiral W. H. Standley, after witnessing the effective training and experience being reaped by the British Royal Navy through its use of the *Queen Bee* radio-controlled target aircraft, called for a similar plane for the U.S. Navy.

Money was appropriated for the design and procurement of a flying target. Aircraft radio had been vastly improved over the years with sets capable of sending both voice and code. It had been over ten years since the Navy's last test of a radio-controlled aircraft and it caught up with a vengeance. A year after CNO's order went out, on November 15, 1937, the first pilotless flight was made at Coast Guard Air Station, Cape May, using an N2C-2. One year later, in August 1938, the drone appeared over the firing line, maneuvered while under antiaircraft fire much to the gun crews' consternation, and revealed the ineffectiveness of the antiaircraft batteries. Admiral C. C. Bloch, Commander in Chief, U.S. Fleet, endorsed the use of the drone in an oblique way when he commented on the results of the gunnery exercise: "It is considered most fortunate that the condition should have been discovered in target practice firing, and not in an actual campaign."

But many could not envision it in any other role than that of a flying target, least of all as an expensive weapon. Late in 1935, Lieutenant Commander Forrest Sherman, destined to become CNO one day, reported to the Bureau of Ordance, "It is out of the question to expect any glider or even any dive-bombing plane to strike with sufficient velocity to carry a large explosive load through a deck without

its breaking up. This, incidentally, is the fallacy in the conception of suicide squadrons of dive bombers prepared to dive into the decks of enemy ships. In so doing, they would prevent their bombs from striking with sufficient velocity to penetrate even the weather deck." Unfortunately, the Japanese naval staff did not agree with his evaluation in later years.

Neither did certain individuals in BuAer. In March 1940, at the Bureau's direction, steps were taken to convert a TG-2 torpedo aircraft into an offensive pilotless vehicle. The plane, formerly used to control drones, was to be radio controlled and carry a torpedo at set altitudes, just clear of the water, to the dropping point.

That summer, VJ-3, which was responsible for operating target drones for the fleet, was directed to prove the feasibility of directing a drone into a target. Using puffs of smoke emitted by smoke-laying aircraft to simulate ships, the squadron flew the drones into the targets time after time, proving that a 100-foot target could be hit by a drone controlled by an operator in an aircraft 3,000 yards astern.

BuAer was impressed, enough so that it directed further experiments toward the development of assault drones using visual, television and radar direction. By August 1941, some 50 simulated torpedo attacks had been made with television-equipped, radio-controlled drones. The controllers, operating at maximum distances of six miles from the drones, reported clear pictures. In April 1942, tests were conducted against the fleet, including a successful simulated torpedo run against the destroyer *Aaron Ward* and an actual crash assault on a towed raft by a television-guided drone.

Prior to the outbreak of war, BuAer had been considering the use of obsolete aircraft for assault drone duties and simple, specially designed, easily manufactured assault drones. With the attack on Pearl Harbor, all available aircraft were needed, precluding the adoption of the former plan. In January 1942, the Naval Aircraft Factory was directed to submit designs and cost estimates for assault drones. The following month, BuAer specified that NAF could proceed with the development of a special radio-controlled, television-directed aircraft.

The result was the TDN and TDR assault drones, the former built by NAF and the latter by Interstate Aircraft and Engineering Corporation. Both drones were low-wing monoplanes with tricycle landing gear and were powered by 220-hp Lycoming engines. Their top speed was approximately 150 knots, they had a range of 600 miles and explosive payloads of 2,000 pounds. Two later versions, the TD2R and TD3R, were equipped with 450-hp engines, had a top speed of 230 mph and a 1,700-mile range. Each carried a television camera and a transmitter in its nose which sent a picture to the control plane of what was directly ahead. The flight controls were operated by the controller via radio signals.

A little over a year later, a command was established to form, outfit and train special units for the operational employment of the assault drones. Special Task Air Groups, dubbed STAGs, were composed of squadrons with the designator VK. The first squadrons of STAG-1 were commissioned in October 1943 and quickly began training with the TDRs and TBM control planes. With the backing of Com5thFlt, Admiral W. F. Spruance, STAG-1 prepared to assist in the attack on Eniwetok scheduled for May 1944. Unfortunately for the group, the first phase of the Marshall Islands campaign was so successful that the date for the Eniwetok campaign was changed to February and the island was taken before the drone units could be deployed.

With their combat opportunity lost in the Marshalls, the assault drones were assigned instead to the Russell Islands with the first elements of STAG-1 arriving in June 1944. The group made its combat debut soon after its arrival when it attacked a beached Japanese freighter at South Bougainville used to house antiaircraft gun emplacements in defense of Kahili airstrip. Guided by controllers in TBMs several miles away, four TDRs dove on the ship. Two hit targets. Between September 27 and October 26, STAG-1 expended 46 TDRs against Japanese installations in the Bougainville and Rabaul areas. Twenty-nine were on

A TDR-1 is prepared for an attack somewhere in the Pacific. Note the television camera in the nose.

With guns removed, remote guidance and television installed, PB4Y-1 could have qualified for Anvil.

target. In general, where there was little need for high speed or long range, the assault drones were effective. But, as strike distances and the accuracy of enemy ground fire increased, the speed and range of the drones could not meet the tactical requirements assigned to them. The consequences were the termination of production of TDNs and TDRs, the end of the STAG units when the war was finished, and the turning of experimental attention to new projects of a similar nature.

In Europe, an equally short-lived but no less unique assault drone program was tried in 1944 under the code name Project *Anvil*. Using PB4Ys outfitted with remote control gear and television, loaded with 25,000 pounds of torpex and under the control of a PV-1, as a control plane, Project *Anvil* was based at a secret airfield north of London. Its mission was to destroy a German V-2 installation in occupied France. Because of the urgency of the project, the special air unit assigned to *Anvil* did not have time to install equipment that would assure a pilotless takeoff. Operating procedures called for a takeoff by human pilots who, after checking automatic and radio control, would bail out at 2,000 feet. Thereafter, the control plane, one-half to one mile astern of the PB4Y, would be in control.

An experienced pilot, Lt. Joseph P. Kennedy, Jr., of VB-110 volunteered to fly the PB4Y drone. On August 12, Kennedy and Lt. Wilford J. Willy took off in their explosive-laden aircraft accompanied by the control planes. With a fighter cover of P-51s just ahead, the two pilots began checking the radio controls. Twenty minutes after takeoff, the 25,000 pounds of explosives detonated unexpectedly, killing both men. While no definite clues were available as to how the tragedy occurred, the electrical circuits were suspect and the electrical fuse system was replaced by a mechanical system.

A second pilot from VB-110, Lt. Ralph Spaulding, was assigned to the project. The drone tested out well and was prepared to go against the V-2 site in France when word was received that Allied invasion forces had taken the proposed target. In order that the drone would not go to waste and to prove its ability, a target in Helgoland was chosen for the assault.

September 3, 1944, found Lt. Spaulding flying the explosive-filled drone by himself, checking and adjusting the controls and safely parachuting over the English countryside. The control pilot in the PV signaled the drone to fly at 300 feet, which it did, skimming above the North Sea for nearly three hours with very few adjustments required. When Helgoland was sighted, the drone's television camera was activated. Monitoring the television while flying in an Army B-17 some distance from the drone, Ens. J. M. Simpson, the unit's special gear officer who supervised the remote control system, described the final minutes of the mission, "Almost immediately we could see bursts of flak in the television camera's field of view. In my television screen several miles away at about 5,000 feet, I could see trees, streetcars, automobiles, windows in barracks, an airfield complete with airplanes and the enemy running by the hundreds to take cover. . . . The control pilot in the PV mother plane guided the drone as if he were in it, straight toward the airfield. Just before the hit, flack knocked out the camera too late to help the enemy. When the picture disappeared, I watched the hit from the waist. . . . It was the largest explosion I had ever seen. The column of smoke was above us and the mushroom appeared to be at about 8,000 feet. It was still there when I looked back several minutes later as we were getting away from there fast."

The sight of that mushroom cloud was overshadowed by a still larger one a year later, one which brought WW II to an end and, with it, the assault drone.

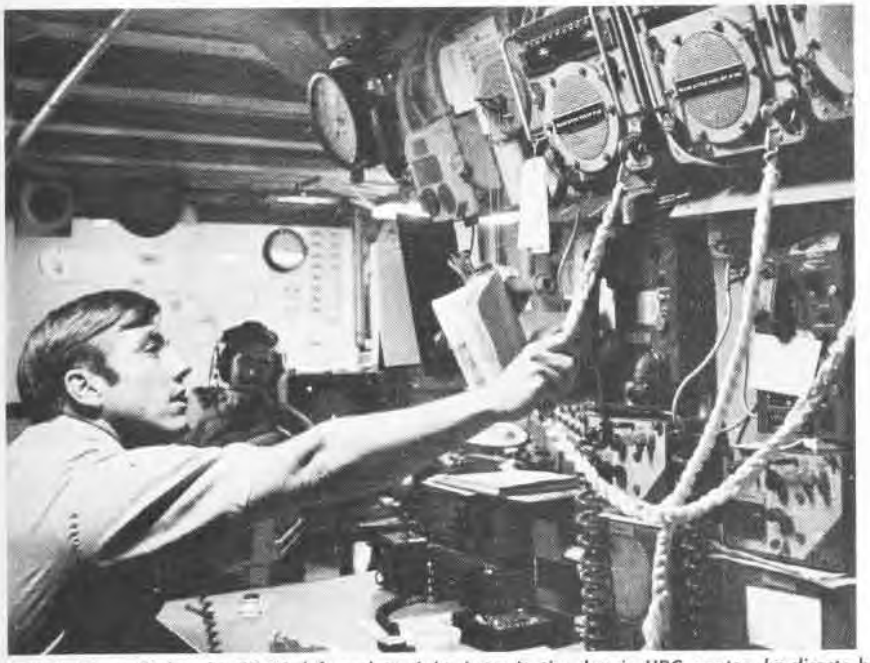
The guided missile had arrived from Germany, quickly spawned a variety of American missiles and eliminated the need for an armed pilotless aircraft. Except for a well publicized but brief appearance in 1952 when radio-controlled F6F-5Ks were used against North Korean targets, the "assault" was no longer a drone function. Drones remained principally targets with some reconnaissance functions added to the mission in recent years.

Present-day guided missiles, smart bombs and others of that ilk owe much to the earlier flying bombs, assault drones, etc. The pioneering of remote control and television guidance systems was enough to earn them a place in aviation history, but they may not be dead, only lying dormant waiting for a better day.

Lately, there has been talk of remotely piloted vehicles (RPVs) which in appearance resemble pilotless aircraft more than they do guided missiles and are capable of a number of missions currently performed by manned aircraft. One high ranking Air Force general described his version of the RPVs in part: "They could mount guns, rockets and missiles or, since they are expendable, could be flown directly into the target."

But that is another story — or is it?

ONE NAVY PILOT AT WORK



LCdr. Smith preflights the CH-46, left and at right. Later in the day in HDC, center, he directs helicopter operations during amphibious exercise.

Story and Photos by PH1 John R. Sheppard

USS *Iwo Jima* (LPH-2).

Huge — a helicopter carrier 602 feet long, weighing 17,000 tons.

Crowded — over 1,500 sailors and Marines squeezed into confining berths call this ship home.

Hot and steamy — smelling of human bodies, unwashed laundry, steam, fuel oil and aviation gas.

People — the core of the ship. Some awake all night, some about to awake.

0600. Reveille. The sharp, piercing trill of a bos'n's pipe competes for attention with the hum of the ship's blowers and the whine of her electrical generators.

LCdr. Wayne A. Smith awakens. He looks at his watch and stares into the darkness for a few moments, thinking of his family in Naples, Italy. Snapping on his bunk light, he swings his feet onto a thin green rug.

The day has begun for the 35-year-old U.S. Navy pilot.

After an "aviator's breakfast" of coffee and a cigarette, LCdr. Smith, air operations officer, hurries to the helicopter direction center (HDC) and receives the morning air operations brief.

At 0730 he is in his flight suit and is preflighting *Gator*, the ship's CH-46 *Sea Knight*, with Maj. James E. Lary, USMC.

Maj. Lary, a veteran of 14 years' flying and attached to *Iwo* as ship's intelligence officer, has been assigned to instruct Smith on the finer points of the *Sea Knight*.

"Usually Navy pilots check each other out on the different aircraft," explains Smith. "However, there are few Navy pilots aboard *Iwo* — most are Marines. Maj. Lary and I work together every day, so it was natural for him to teach me the idiosyncrasies of the 46."

Thirty minutes later, with a high-

ONE NAVY PILOT AT WORK

pitched whine and the rhythmic chop-chop-chop of the rotor blades, the helo is airborne on the day's mission.

During the flight, Smith's helo will drop five men from a UDT team into the water for a beach reconnaissance and serve as an airborne camera platform for two members of the Atlantic Fleet Combat Camera Group who are filming amphibious operations off the Greek coast. Later, it will lift personnel and cargo to various units of Task Force 61.

By 1200, LCdr. Smith is back on *Iwo*, in the cool wardroom, wolfing down a hasty lunch. Minutes later he is back in the HDC directing helicopter operations during the amphibious exercise.

A leisurely supper helps to tranquilize a hectic day. But by 1900 he's in air operations again preparing the operations' green sheet (the daily flight schedule).

Ninety minutes later, he is back in HDC directing helicopters from HMM-263 back to the ship.

Smith finishes his day by preparing map overlays of the amphibious operation. He has been at work for 17 hours.

"I don't mind working long hours at sea," explains the blond lieutenant commander. "It helps pass the time. Besides, I love flying and my work." Smiling, he adds, "If I can get my work finished while at sea, then I will have more time with my family while I'm in port."

What makes a man with an M.S. in personnel management, a B.A. in international relations and a B.S. in

The 17-hour day begins to take its toll as he checks rough of tomorrow's air ops.

Even with his busy schedule, LCdr. Smith still finds time to relax with his books.

education join the Navy in the first place?

What makes him want to stay in when it is not fashionable to be a part of the military?

"Perhaps it was my Dad who started me thinking of the Navy as a way of life," he explains. "Dad (retired Navy officer William A. Smith) advanced from seaman to captain during his career. After WW II we were all over the Far East and at many different duty stations. I guess I liked moving around and seeing different countries, their people and culture."

Sharing his Navy life with his family is exactly what he has been able to do.

"Although *Iwo Jima* is home-ported in Norfolk, Va.," explains Smith, "I had my family flown to Naples at my expense, so we could all be closer to each other. My wife tries to meet me in as many ports as possible. Depending on school, she brings the kids too.

"Gloria, my wife, and the kids (Bret, 11; Brad, 9; and Lisa, 7) came to Venice while the ship was in port. All of us celebrated our 13th wedding anniversary, my commissioning date and the date I received my wings. It was a happy occasion."

Smith explained that his brother-in-law, Jon Lewis, had planned to teach at a junior college this year, but they talked him into coming to Italy with them instead.

"When my wife visits me in our ports of call, Jon babysits; when Gloria is home, Jon roams around Italy. It all evens out."

Smith's duties as air operations officer, training officer, senior shore patrol officer for Task Force 61 and one of four pilots for *Gator* keep him busy. But he has had time to observe and formulate strong opinions about his Navy.

Smith feels that in the future there will be more of a balance between the emphasis placed on men and the emphasis on material.

"Having the biggest ships and guns is not all that is necessary for a good Navy. We must look to the human aspect. I believe that the home-porting of ships in Athens is a great idea. It helps keep families together."

Smith is a staunch backer of CNO's Z-grams and feels that the "secret to a successful Navy is the people in it."

He maps out his future this way.

"My family and I have toured the Far East and now we will be seeing part of Europe. Since I plan on staying in the Navy at least 20 years, I'll have an opportunity to show them more of the world I live and work in."

Seeing the sights, Wayne and Gloria take a break close to the ruins of the Parthenon.

THE SELECTED AIR RESERVE

Bombs Away

Selected Air Reserve pilots showed what they are made of recently in the Commander Fleet Air Lemoore biannual bombing derby. Flying A-7 *Corsair IIs* against their active duty counterparts, the Reservists made off with many of the top honors.

Attack Squadron 304 won the Silver Bomb Award as the best in the visual attack category, with VAs 305 and 303 taking third and fourth places, respectively.

Lt. Thomas J. Scully, VA-304, scored over 33 other pilots in the visual attack contest to win the Golden Bomber title. VA-304 took both first and second place in this competition, with VA-305 third.

Lt. Joe H. Algermissen, VA-303, topped 60 other pilots to capture the best individual strafer pilot award, with Reserve pilots taking the top four places in this event.

Attack Squadron 304 also placed third in the Golden Bomb contest; fleet squadrons took the two top spots.

Achievement Awards

Five Selected Air Reservists earned Antisubmarine Warfare Achievement Awards during the multi-national ASW exercise *RimPac 72*, (*NANews*, December 1972, p. 30). They are Ltjg. Jay W. Bayman and AW3 Neil Drucker of HS-84, and Lt. John P. Meyn, AW1 Ralph R. Barnes and AW2 Michael E. Devaney of VS-83.

The five were on active duty for training with their squadrons aboard the ASW carrier *Ticonderoga* (CVS-14) during the exercise held in the Pacific near Hawaii. Each of the men was credited for his part in simulated kills against "enemy" submarines, attesting to the high degree of readiness achieved and maintained during training in their Reserve units.

A Split Cruise

VR-51, based at NAS Alameda, Calif., has completed the third leg of its four-part active duty for training cruise. During this third mini-cruise of the year, a squadron C-118 *Liftmaster*, with flight crew and maintenance support personnel, island-hopped 20,630 miles in the Pacific and logged 99.4 hours during the two weeks.

Operating in conjunction with VR-21 at NAS Barbers Point, Hawaii, Commander Vaughn Hall and his crew flew to eight different places including Point Mugu, Calif.; Barbers Point; Midway and Wake Islands; Agana, Guam; Cubi Point, R.P.; and Da Nang and Tan Son Nhut, Republic of Vietnam. They carried everything from civilian harbor-dredging personnel to an underwater demolition team, and from hospital supplies to radar replacement parts for an aircraft carrier.

The new active duty for training concept which has divided the squadron into four separate units has proven quite effective in allowing greater aircraft utilization and support to the fleet. Two earlier segments of the four-part cruise have been to Rota, Spain. The fourth is scheduled to operate in the Pacific later this month.

Fifteen Naval Air Reservists who distinguished themselves during helicopter rescue actions at flood-stricken Wilkes-Barre were honored at a Navy Day ceremony at NAS Lakehurst, N.J. The 15 received medals ranging from the Distinguished Flying Cross to the Air Medal. Rear Admiral Eddie H. Ball, area representative to Commander Naval Air Reserve, made the presentations. Pictured from left are: (front row) PO2 William A. Stephan, Navy Commendation Medal; AN Timothy J. Driscol, Navy Commendation Medal; LCdr. Robert W. Lemmert, Distinguished Flying Cross; PO2 Kenneth F. Elliott, Navy and Marine Corps Medal; Lt. Morice O. Mumby, Air Medal; and AN Herbert R. Brinkert, Air Medal; (back row) PO2 Joseph Van Simaeys, Navy Commendation Medal; PO3 John F. Richardson, Navy and Marine Corps Medal; Lt. William D. Sokel, Air Medal; Cdr. Edward R. Arnold, HS-75 commanding officer; Cdr. Thomas Speelman, CVSGR-70; Capt. Leo P. Zeola, NARU commanding officer; RAdm. Ball; LCdr. John P. Cosgrove, Distinguished Flying Cross; PO2 William Kelley, Navy Commendation Medal; PO2 Deryck True, Air Medal; LCdr. David E. Clement, Air Medal; and Cdr. William P. Newton, Air Medal. Missing is LCdr. Carl William Guenther, Air Medal. RAdm. Ball characterized the actions of the fifteen individuals as examples of Naval Air Reserve pride and professionalism.

PO1 William Richard Deist of RTU-75, NAS Lakehurst, N.J., has been chosen the Naval Enlisted Reserve Association's top enlisted Naval Air Reservist. The announcement was made in a recent message from the Chief of Naval Operations. Petty Officer Deist was chosen on the basis of his professional performance, drill attendance, military behavior and involvement in community affairs.

Fallon Drill

Members of VA-303, NAS Alameda, Calif., recently performed their weekend drill at NAS Fallon, Nev., where they participated in weapons delivery exercises.

Squadron ground crews, transported to the drill site aboard C-118 *Liftmasters*, worked with their active duty counterparts to keep the nine A-7s flying during the training exercises.

Twenty Es for excellence in weapons delivery were awarded on the last day. LCdr. Gary Holmes, who set a strafing record in 1971, broke his old record by making 121 hits out of 150 rounds of 20mm ammunition.

Army Commendation

LCdr. Donald R. McGarrigle, active duty administrative officer of NARD Olathe, Kan., recently received a letter of commendation from the Army. He was cited for rescuing one injured crewman and assisting with the rescue of two others after their Army Reserve UH-1D had crashed.

The helicopter, carrying the three Army Reservists to the Army's Area Maintenance Support Activity at NARD Olathe, crashed during a landing attempt. Upon impact, fuel spilled from a ruptured fuel tank and instantly soaked the interior of the helicopter and the ramp area immediately around it. Seconds later, the engine caught fire.

LCdr. McGarrigle, who was watching the helicopter's approach and saw it fall, rushed to the aircraft and removed SP4 Daniel Chavez from his seat where he was strapped in. McGarrigle then helped move Chavez and the two other injured men.

The letter of commendation reads, in part, "LCdr. McGarrigle is to be commended for his heroic achievement in the face of possible death to himself," and credits him with being able to accomplish the rescue "by placing the value of his life behind that of the crash victims."

The Olathe fire department, which had units standing by during a drag meet several hundred yards from the accident scene, quickly extinguished the burning helicopter.

Double Honor

Ms. Hanes Burkart, NARDiv G-1, NAS Alameda, Calif., received two honors in the two careers she pursues. She was promoted to lieutenant in the Naval Air Reserve, and was awarded her DPM as a doctor of podiatric medicine. Dr. Burkart contemplates going on active duty as a podiatrist after she serves her internship — which could make her the first woman foot specialist in the Navy.

An Aerial Chase

A Selected Air Reserve pilot who was a hijack victim as an airlines pilot in 1968 was again thrust into the middle of a tension-filled drama during a recent hijacking.

LCdr. Robert H. Moore, RTU-54, was preparing for a routine training flight from NAS Atlanta, Ga., when a call for help was received. Assistance was needed to transport FBI agents to a hijacked plane's next destination.

Moore and his crew immediately prepared to divert their flight plan as authority was sought from the Chief of Naval Operations. After approval was granted, Moore launched his 22-year-old C-118 and hopped over to Atlanta International where more than 20 FBI agents climbed aboard the *Liftmaster*. They were to spend more than 13 hours in the air, twice arriving at destinations ahead of the hijacked DC-9.

Commander Jackie Cooper, longtime movie and television star and Naval Reservist, chats with Captain L. Keith Simon, Jr., Commander, Naval Air Reserve Forces, North Island, during Navy birthday activities at NAS Miramar, Calif. Cdr. Cooper, an honorary Naval Aviator, was a special guest at the celebration attended by civilian and military dignitaries.

By listening to radio conversations from the hijacked airliner, Moore knew where the DC-9 was headed and the slower Navy transport managed to arrive ahead of them at Chattanooga, Tenn., and Orlando, Fla. The chase plane's first landing was at Knoxville, Tenn., but the hijackers had decided not to land there and headed for Chattanooga.

With ransom money in hand, the hijackers took off for Cuba, again followed by the Navy transport. When the airliner landed at Cuba, the *Liftmaster* was released from its mission and landed at MacDill AFB, Tampa, Fla., for refueling. LCdr. Moore and his crew, with the FBI agents still aboard, were en route home to Atlanta when he received a call from ground radio — the mission was still on. After only a brief stay in Cuba, the hijacked airliner had returned to the U.S., refueled at Key West, Fla., and was airborne again, this time for Orlando.

Arriving first in Orlando, Moore elected to land after the hijacked airliner as a safety precaution. Before the FBI agents with Moore could be deployed, the DC-9 was being fired upon by other agents and took off on what was to be the last leg of its flight

As the hijacked plane made its way toward a final landing in Cuba, Moore headed the *Liftmaster* back to NAS Atlanta, its mission finally ended.

NAVAL AIRCRAFT

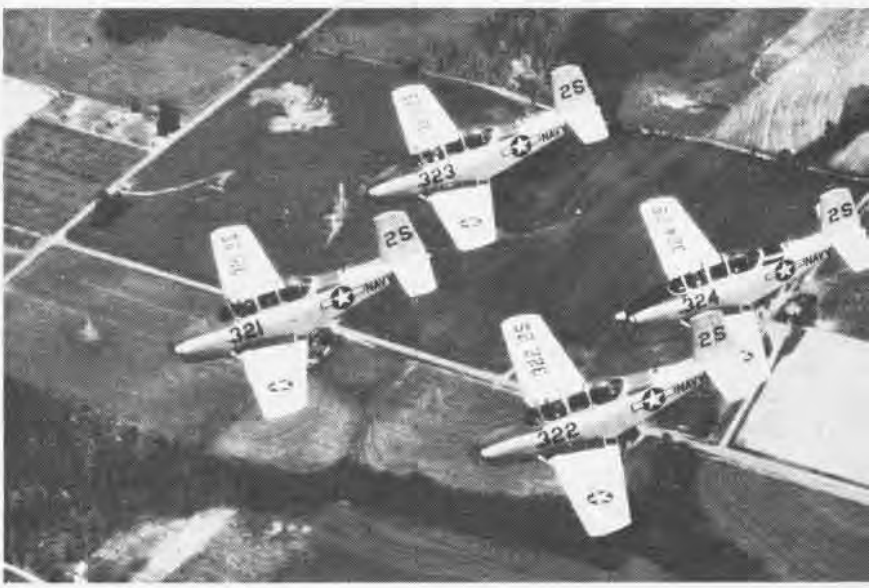
M

Since the mid-1950s, the T-34B *Mentor* has been the plane in which nearly all Navy, Marine and Coast Guard Aviators have learned to fly. As such it leads a rough life, filled with loops, rolls, stalls and hard landings at the hands of eager but novice pilots. Developed with private funds by the Beechcraft Corporation, the *Mentor* was offered as a low cost "off-the-shelf" primary trainer to replace the SNJ *Texan*. It first flew as a prototype in 1948 and became the first post-WW II primary trainer when the T-34A was delivered to the Air Force in 1950. The Navy evaluated this model in 1953 and ordered a modified T-34B version the following year, which entered service in 1955 at NAS Whiting Field. *Mentors* are now concentrated at NAS Saufley Field with Training Squadron One, where the aviator-to-be is first introduced to the art of airmanship.

The *Mentor* has several advantages over its predecessor including more economical operating costs and easier maintenance. It is fully aerobatic, stressed for 10 positive and 4.5 negative Gs. The T-34B features conventional controls, electrically operated slotted flaps and landing gear, and a roll bar built into the windshield frame. VHF communications and navigation equipment are standard. Exhaust augmenters provided to reduce internal drag also eliminate the need for cowl flaps. The T-34B has a basic weight of 2,246 pounds with a maximum takeoff and landing weight of 2,975 pounds.

From 1958 to 1962, *Mentors* shed their all yellow paint scheme for a more visible combination of white and day-glo red.

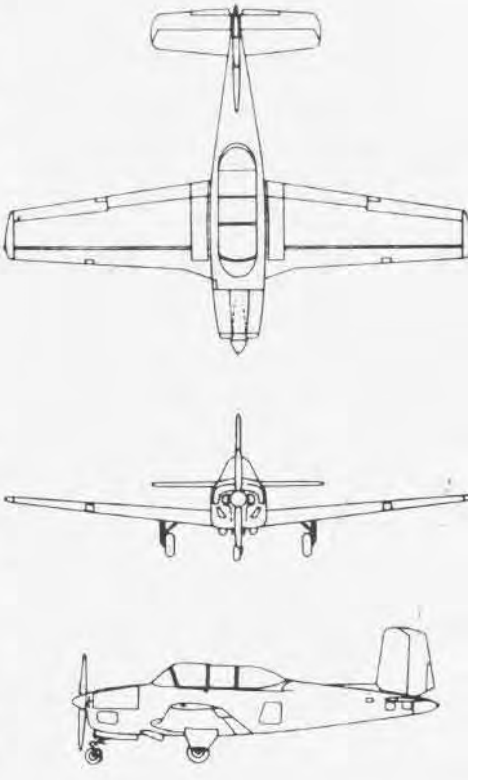
Several other countries produced T-34s under license.



N T O R

T-34B

Length	25'10"
Height	9'7"
Wing span	32'10"
Engine	Continental O-470-4
Horsepower at S.L.	225 hp
Service ceiling	18,600'
Maximum speed	162 kts.
Stall speed (2,500 lbs.)	
power off	44 kts.
approach power	41 kts.
Range	755 nm
Fuel capacity	306 lbs.



The Nebulous Neutercane

By Commander N. F. O'Connor

Only the Navy can boast of a heritage that lists such colorful figures as King Neptune and Davy Jones. These heroes of the deep, however, only characterize the mystery, loneliness and danger of life at sea. It is left to the sea story, which is an integral part of Navy life, to provide the details of the rigorous existence. Needless to say, some of these colorful tales originated in the fertile and vivid imaginations of old salts bent on entertaining their shipmates or any other listener. Many of these tales have survived and over the years have been polished, embellished and honed to a fine edge.

If our space age meteorological satellites can be believed, perhaps a few of these adventures may be based on more truth than previously suspected. During the past couple of years, weathermen have noted unusual cloud clusters in the summertime satellite pictures of the Western Atlantic. What was different was the size of the cloud pattern — not the large-scale cloud shield associated with known systems but a much smaller, compact cloud field. Meteorologists recognized that they were observing something akin to a mini-hurricane. Yet, what they were seeing was not really a hurricane, nor was it thought to be a typical mid-latitude low pressure system. So, in a quandary, the scientists named the phenomenon a "neutercane."

In the Navy, which is noted for its salty vocabulary, the term neutercane is almost an alien term. But a neutercane can be just as crusty and mean as any shellback. While it may sound like it, neutercane is not a figment of the women's lib movement, although a few sages have suggested that the two have certain common fickle characteristics.

Fickle or not, the term neutercane will be with us for awhile. It would appear as though the weathermen who gave birth to this name did so very, very carefully in order not to invoke the wrath of Davy Jones or any pressure group. Weathermen have recently come under criticism for what has been, in previous years, a routine administrative procedure. Last year, the annual publishing of names to be used for Atlantic hurricanes created a frenzied uproar of near-gale proportions. At the January 1972 Hurricane Conference in Miami, the weathermen were verbally attacked for using women's names to label hurricanes. As reported by the press, a progressive women's group took exception to the practice and suggested that the storms be called "himmicanes" and labeled with male names. Fortunately, the recommendation was not accepted. It is not difficult to envision the reaction of a task force commander directed to take evasive action because of *Himmicane Brucie*. A similar response would most likely be evoked by an air group directed to *Himevac*.

Many sea stories originated in the fertile and vivid imaginations of old salts.

In truth, neutercane is probably the best name that could be given to this recently discovered maritime storm. It has half the characteristics of a hurricane, common to the tropics, and half the characteristics of the common mid-latitude low pressure system. During 1972, three neutercanes were specifically identified. In order to keep track of these systems, they are identified consecutively by use of the phonetic alphabet. One fortuitous aspect of this numbering system is that it minimizes personal affronts.

A neutercane is a very small subtropical storm, smaller than a hurricane, larger than a waterspout, and difficult to detect on the average surface weather map. However, the probing eyes of meteorological satellites have been primarily responsible for identifying the tiny circular storms which are often less than 100 miles in diameter.

These potentially dangerous storms apparently gain their energy from the same sources as the mid-latitude storms — temperature or density discontinuities. The energy sources, once developed, appear to be intermediate between those which stoke the hurricane and those of the typical mid-latitude cyclone.

The neutercane is not a resident of the tropics but appears to form between the 25th and 35th parallels, several hundred miles off the east coast

Unusual cloud clusters were noted . . .

of a continental land mass. Of the three neutercanes observed in the Atlantic last year, one generated wind gusts of nearly 100 mph as it brushed near the southern tip of Newfoundland. Similarly, another neutercane passed inland over an uninhabited section of the Georgia coast, but the small size of the system was such that its arrival drew little attention.

As they are found in the western portion of the Atlantic, so are neutercanes found in the western Pacific, although not so identified. The Japanese refer to the storms as mini-typhoons.

Through the technology of meteorological satellites, the neutercane has been exposed. In all its fury, it may very well be the key to the mysterious disappearances of sailing ships during the last century. Through knowledge and study, the neutercane may soon be stripped of its anonymity and no longer pose a hazard to ships and planes at sea.

. . . weathermen have come under criticism.

Antarctic Support

McMURDO STATION, Antarctica — Antarctic Development Squadron Six has landed a team of French scientists at Carrefour station on the Antarctic coast. The scientists, who plan to study the movements of Eastern Antarctic sheets, were flown to their destination in a ski-equipped LC-130 *Hercules* by Commander John B. Dana, squadron skipper.

As part of the project, VXE-6 will airdrop supplies on five separate occasions to the French team making the ice traverse from the Adelie Coast to the Soviet Union's Vostok station.

When the expedition is completed this month, the squadron will fly the scientists and 4,000 pounds of frozen ice core samples, collected during the exploratory journey, from Vostok to Christchurch, New Zealand.

NRL Development

WASHINGTON, D. C. — A team of chemists at the Naval Research Laboratory, headed by Dr. James R. Griffith and Mr. Donald E. Field, has developed a family of novel coating materials, through the use of fluorocondensation polymers, that are expected to find important uses in the military and in private industry.

These materials, with some properties similar to those of the well known resin Teflon, were developed recently as spray-paint protective coatings for Navy aircraft.

Dr. Griffith explains that the new coating should reduce aircraft maintenance cost since it is readily cleansed of common aircraft surface contaminants and yet will not wash off when planes are cleaned with strong chemical agents.

Cornell Aeronautical Laboratory is using the product in its environmental chamber as a protective coating against ultraviolet rays because of its resistance to particle generation and is easily cleaned. The work at Cornell is sponsored by the Environmental Protection Agency and NRL as part of their continuing quest for answers to pollution problems.

One of the important potential uses of the new material is expected to be in the medical world, providing protective coatings or moldings for implantation of prosthetics into the human body.

CL-84 Tested at Pax

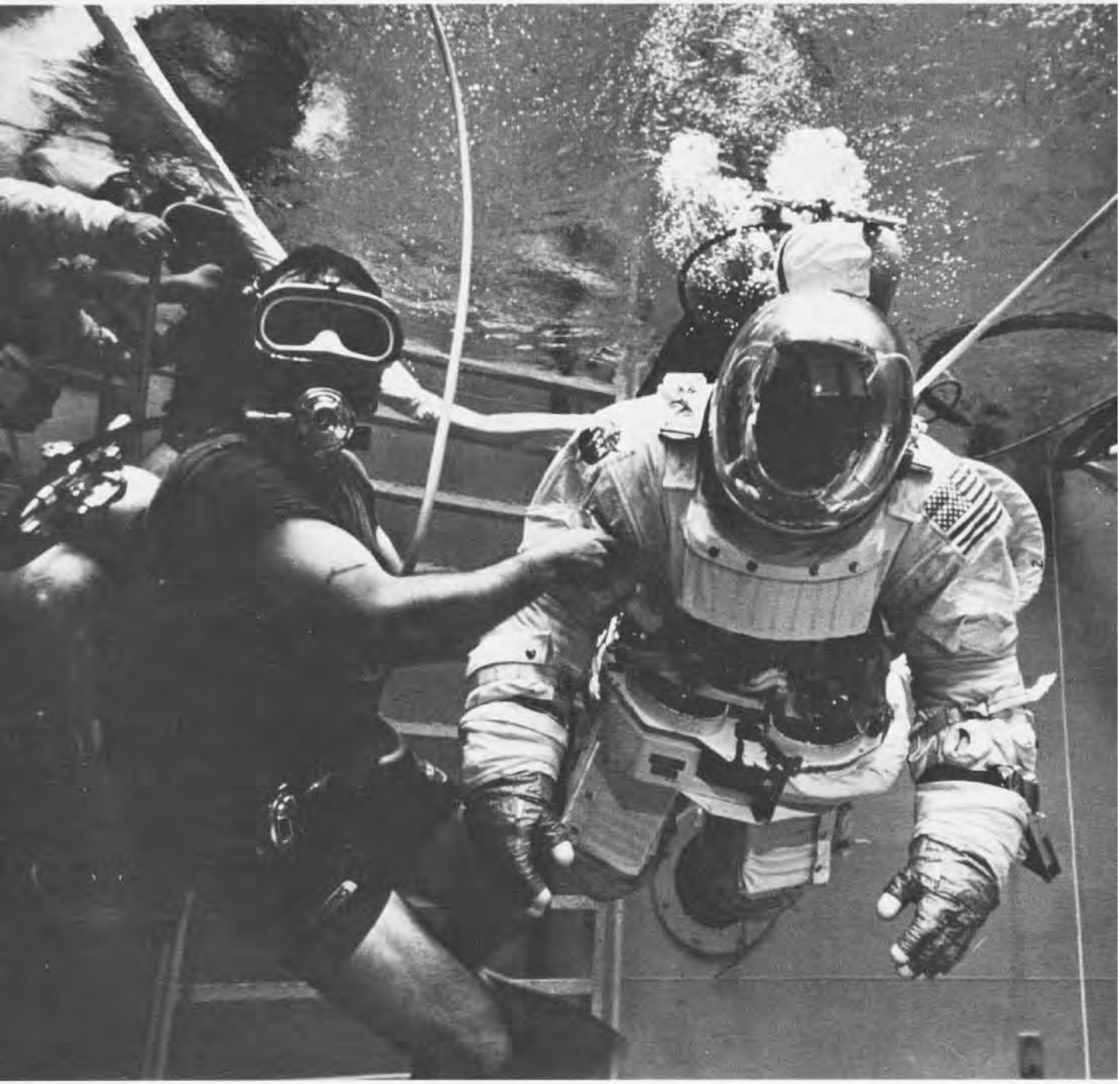
PATUXENT RIVER, Md. — A Canadian-built V/STOL aircraft is at the Naval Air Test Center for a one-year series of development test flights by the U.S., Canada and United Kingdom.

The CL-84 is a tilt-wing, turboprop aircraft built by Canadair, Ltd., a subsidiary of General Dynamics. Airborne, it can change in seconds to conventional fixed-wing flight. It also can land and take off as a conventional aircraft, using only 200-300 feet of runway.

Conceptual development tests have been completed on the CL-84. It will be used at NATC as a test bed for electronic display cockpit equipment designed to improve adverse weather flight capabilities and terminal guidance for any V/STOL aircraft.

In the tripartite program, the CL-84 is provided by Canada, the cockpit equipment by the United Kingdom, and the test facilities by the U.S. Pilots from all three nations will conduct the flight tests.

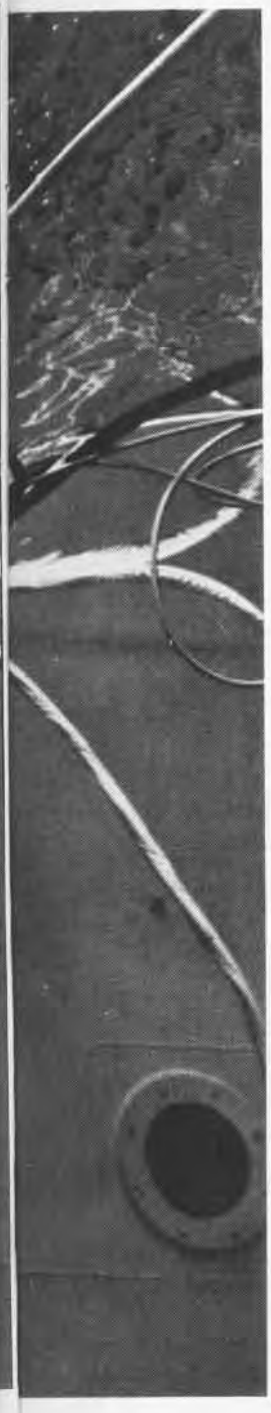
The CL-84 is of interest to the U.S. Navy because of its possible use aboard the contemplated sea control ship which would require V/STOL aircraft operating without catapults or arresting gear from short decks. The tilt-wing CL-84 has this capability while retaining the speed, range and altitude of a conventional turboprop aircraft.



Below

Astronauts selected for Skylab are assisted by scuba divers during simulated EVA maneuvers in neutral buoyancy simulator at Marshall Space Flight Center.

NASA

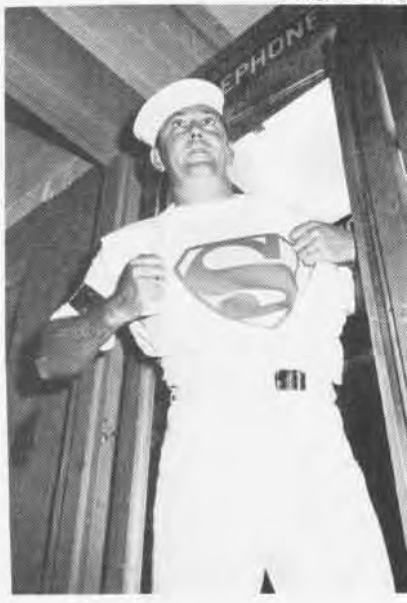


JO2 Bill White

Above

PR1 Ron Boren salutes a C-117 after stepping from aircraft over NATTC Lakehurst.

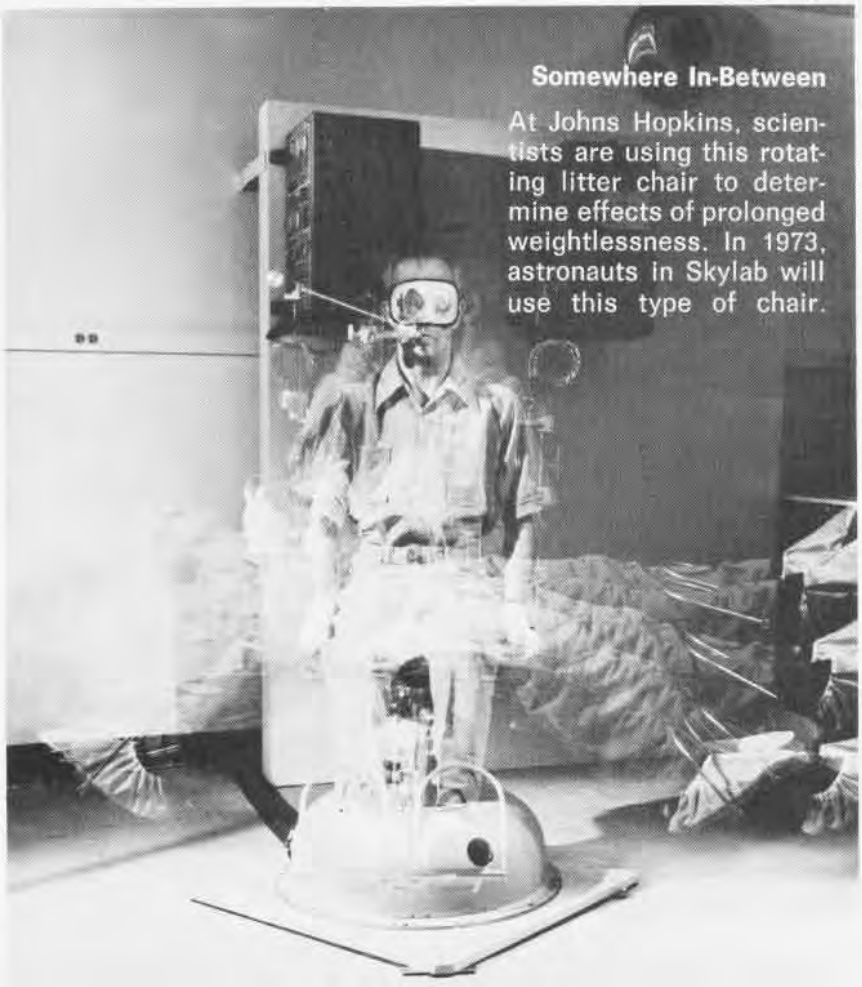
George D. Haig



Beyond

AW2 Ben Holder, HSL-30's Super Safety Man, cannot leap over buildings but is everywhere he is needed at NAS Lakehurst.

Johns Hopkins



Somewhere In-Between

At Johns Hopkins, scientists are using this rotating litter chair to determine effects of prolonged weightlessness. In 1973, astronauts in Skylab will use this type of chair.

NATTC Glynco

Radar Systems Maintenance

Story and Photos by JO2 A. Y. Martel

Today's radar electronics systems have developed into highly complex machines and installations. Computers, radar systems and other electronic devices used in Naval Aviation routinely team up in everyday operations at air stations and aboard aircraft carriers to detect, guide, keep track of and, if necessary, land an aircraft "hands off."

The Air Traffic Control Equipment Maintenance School, Naval Air Technical Training Center, Glynco, Ga., trains Navy and Marine Corps electronics technicians in preventive and corrective maintenance of radar systems and associated equipment used in ground control approach, carrier air traffic control and Marine air traffic control units.

In addition to 18 courses in systems maintenance, the school also conducts a six-week course for Navy enginemen in the maintenance of power, air conditioning, heating and air distribution equipment used in ground control approach installations.

A two-week electronics maintenance officer course emphasizes supervision and coordination in the installation, maintenance and repair of the air traffic control systems.

The classes are small, averaging five students. After classroom instruction on theory and operation, the student receives actual maintenance training. With constant practice, he becomes well versed in the maintenance techniques necessary to repair or troubleshoot a particular installation.

The length of the courses varies from seven days to 17 weeks, depending on a system's complexity.

There is no doubt that more ingenious and sophisticated electronics systems will be developed in the future. And NATTC Glynco's Air Traffic Control Equipment Maintenance School will provide the technicians — the backup human element — to keep them operational.

Glynco students learn how to maintain various radar electronics systems: above an SPN-45; below, a UPS; and, at right, an SPN-43.

at Sea with the Carriers

As the peace talks continued, Seventh Fleet news releases continued to reach the NANews office on a daily basis, reporting the air war below the 20th parallel. During October and November, it was business as usual as pilots from Midway, Saratoga, Enterprise, Oriskany, Kitty Hawk and America continued their strikes against the enemy while the carriers rotated line periods.

Oriskany (CVA–34)

Lt. Clint J. Farmer, an A-7 *Corsair II* pilot of VA-155, ended his first day aboard *Oriskany* by touching down to make his second, and the carrier's 180,000th, arrested landing.

"I was kind of surprised," was Farmer's response when informed of the landing count.

Oriskany and CVW-19 were on the fourth line period of their current WestPac cruise. *Oriskany's* seventh combat deployment to SEAsia.

Commander J. F. Crummer brought down his A-7 *Corsair II* to score his 600th flight deck landing.

"It was more a personal milestone than a Navy record," commented the commander, skipper of VA-215's *Barn Owls*. "I think a thousand's a little out of reach," said Cdr. Crummer during a traditional cake-cutting ceremony in the squadron's ready room. "I'll just take them 100 at a time."

Several hours later, he left *Oriskany* on his second mission of the day, to return for landing number 601.

Lt. Edward G. King made the 181,000th arrested landing. King, an E-1B *Tracer* pilot of embarked Carrier Airborne Early Warning Squadron 111, Detachment 6, made the landing in one of the detachment's two E-1Bs.

Enterprise (CVAN–65)

Enterprises's second line period in the Gulf of Tonkin began with an unusual rendezvous when topside crewmen aboard the *Big E* were surprised

to see a submarine surface off the carrier's port side. It was USS *Gudgeon* (SS-567) surfacing so that a helicopter from HS-2, Det 1 could transfer two of the sub's crewmen to the carrier for medical treatment.

Enterprise recently evaluated a relatively new shipboard weapons handling and loading concept — loading bombs on multiple ejector racks (MERs) and triple ejector racks (TERs) in the bomb assembly area, and then loading the preloaded MERs or TERs on the aircraft,using a powered weapons hoist. The evaluation was the first time the system had been used under actual combat conditions. It reduced flight deck re-arming times and increased overall weapons handling ease. The success of the pre-load method and the safety features of the powered hoist were described by the ordnance supervisor. "It's the first time I've ever seen ordnancemen smile on the flight deck."

Recipients of the Golden Hook Award for the first line period were the *Warhawks* of VA-97, with the individual honor going to Lt. Tom Leonard of VA-143. The Golden Hook is awarded after each line period to the squadron with the best boarding rate.

A special award was initiated for HS-2, Det 1 pilots based on points gained for "landings which place the tail wheel completely upon a 12-inch orange spot within ten seconds of a clearance to land." LCdr. Roger Murray won the award.

Kitty Hawk (CVA-63)

Lt. Craig Bechtel had just completed a strike on a locomotive 30 miles south of Thanh Hoa when his A-7E *Corsair* took a hit from antiaircraft fire.

"I was heading north," states Lt. Bechtel, describing the incident. "I had just dropped my bombs and was circling around to make a run on a truck I thought I saw below me. I squeezed off a round at the truck as I saw a red tracer zip by the canopy and felt the aircraft start to shake.

"The plane was really shuddering. I didn't think I'd make it feet wet over the Tonkin Gulf. Looking in my mirror I could see my right wing on fire and a big hole. It was then I made my Mayday call.

"I figured I was going to go down

Lt. Bechtel inspects his damaged Corsair.

right there because I could see the whole right wing and I was sure it was going to fall off. Finally, the wing fuel burned out and the fire stopped.

Smiling, the pilot comments. "It sure was encouraging having the KA-6D *Intruder* air tanker and other aircraft from the air wing around me."

Lt. Bechtel then faced the problem of landing his battletorn craft back aboard *Kitty Hawk*. "As I got back near the ship, controlling the plane wasn't that hard, except the right wing kept wanting to dip because it was torn apart."

After circling *Kitty Hawk*, he began the difficult landing. "I could get my flaps down only a third of the way; I prepared for a maximum speed landing. I also got ready to eject; because the wind was giving me trouble.

"I was flying with both hands because my right arm was aching from pulling on the stick. I had just enough controls left to bring it in," he sighs.

"The A-7 held together just beautifully."

On October 22, LCdr. Mel Musinger completed his 500th combat mission, in an A-7, the fourth Navy man and the second pilot from *Kitty Hawk* to fly that many combat missions over Southeast Asia.

The 500 mark was first reached in May 1972 when Commander Dick Kiehl flew his historic flight in an A-7 from *Kitty Hawk*. Since then, Commanders Stanley Arthur and Denis Weichmann have counted their 500th (*NANews*, Dec. 1972, pp. 5 and 29).

Nimitz (CVAN-68)

The Navy has announced that the nuclear aircraft carrier *Nimitz* is scheduled to be temporarily home-ported in Norfolk, Va., after commissioning, scheduled for September 1973.

The ship, now under construction at Newport News, Va., will undergo fitting out and shakedown operations in the Atlantic Fleet operating area. The initial assignment of the home port of Norfolk will eliminate long family separations for the commissioning crew. When shakedown is completed, about August 1974, it is anticipated the ship will be based on the West Coast.

The ship's crew will consist of 130 officers and more than 2,900 men.

F. D. Roosevelt (CVA-42)

As CVA-42 celebrated the Navy's 197th birthday, a colors ceremony, a Marine drill team exhibition and a birthday cake cutting were all part of the day's plan.

Present at the ceremony were Robert L. Zimmerman, American Consul General in Barcelona; Mr. Frank Tuma, President of the Barcelona Navy League Chapter; Captain C. J. Youngblade, *Roosevelt's* commanding officer, and Rear Admiral J. P. Moorer, Commander Carrier Division Six.

Four members of VAs 87 and 15, deployed aboard CVA-42 while she was operating in the Aegean Sea in support of Operation *Deep Furrow*, cross-decked to *J. F. Kennedy* while that carrier was participating in Operation *Strong Express* in the North Sea.

LCdr. John Watkins and Lt. Don Yarborough, VA-15, and LCdr. Bob McAfee and Lt. Mike Quinn, VA-87, made the 1,700-mile, five-hour, nonstop flight which is believed to be the first time aircraft have cross-decked over such a long distance. The record flight illustrates the flexibility and mutual support CVAs can offer each other even when operating in widely separated areas.

Constellation (CVA-64)

The first "hands off" or fully automatic landing by an RA-5C *Vigilante* was made by a pair of carrier veterans.

The pilot, LCdr. Tom Myers, and the navigator, LCdr. D. W. Cook, both

flight test pilots from the Naval Air Test Center, Patuxent River, Md., made the historic landing.

A hands off landing is made when the automatic pilot responds to the SPN-42 radar, locking the plane into the glide pattern about six miles from the landing site.

The computerized landing takes the aircraft "all the way in and down," in Myers' words, until the arresting gear halts the plane. The pilot does not have to control either speed or direction.

Hancock (CVA–19)

When Lt. John K. Bray of VA-55 returned from his second combat sortie of the day over North Vietnam, he rolled into the groove behind *Hancock*, called the "meatball," and brought his A-4F *Skyhawk* aboard for his 300th *Hancock* landing. Three hundred landings aboard a single carrier is quite a feat but for Lt. Bray it was even more extraordinary as he accrued these landings in a single cruise.

Lt. Bray was commissioned through the NROTC program at the University of Louisville and received his wings at NAS Chase Field. He joined the VA-55 *Warhorses* in August 1971 and first saw the aft end of CVA-19 during carquals in November. The majority of his traps occurred during combat operations in the Gulf of Tonkin where he flew a total of 246 strike and support missions.

Any *Rampant Raider* of VA-212 will tell you it's good to be home after a long, arduous, nine-month WestPac cruise. But Lt. Will Pear, VA-212 pilot, will tell you that he is happier than most to be home, as that dream of returning to his family was almost shattered in early September.

Late in the afternoon of September 6, Will and his wingman, Lt. Ray Winn, VA-212, were on an armed road reconnaissance mission near Than Hoa when he spotted trucks on the highway. Just after releasing his bombs, his plane was hit by some heavy and accurate antiaircraft fire and the A-4F

A Musical Welcome for Forrestal

Her aircraft were tied down on the flight deck and night was closing in, its stillness reflected by the beauty of the Mediterranean. Suddenly, the quiet was broken by the sounds of trombones and trumpets. A musical welcome to the Sixth Fleet was beginning.

Forrestal was just beginning a Med cruise. The men were welcomed to the Sixth Fleet and the Mediterranean area, with a performance of the Sixth Fleet Music Show aboard the carrier when it made a brief visit to Gaeta, Italy, home port of ComSixthFlt.

The show is made up of a 21-piece Navy band and a 50-member chorus of men and women. The men are all full-time Navy personnel attached to ComSixthFlt's staff or flagship, USS *Springfield*. The women in the show are the wives of these men.

The show has been performed in dozens of cities around the Mediterranean as part of the 1972 Cultural Olympics. Performance sites have included Munich, Germany; Rota, Barcelona and Lluchmayor, Spain; Athens, Greece; Dubrovnik, Yugoslavia; Nice and Villefranche, France; Naples, Italy; the Mediterranean islands of Palma, Sicily and Crete; and aboard several Sixth Fleet ships.

During the performance aboard *Forrestal*, the crewmen were treated to two hours of rock, jazz, Dixieland and big band sounds.

This, of course, was not to mention the "welcome to Italy" performance given by two attractive Italian-born dependent wives.

The "Penguin" was the dance of the night as the performers pulled the crewmen out onto the deck for an impromptu dance session and exchanged an array of waddles.

Members of Sixth Fleet Music Show welcome Forrestal to Med. After the performance, the Penguin was the dance.

immediately burst into flames. His problems were further compounded by an engine failure as he turned seaward and went through his frequently rehearsed emergency procedures, which included dropping his external stores and preparing for ejection. Despite the fire, control problems and engine failure, he managed to nurse the crippled aircraft three miles off the beach before he punched out as he was passing through 2,000 feet.

The seat worked exactly as advertised but, as he was making the nylon descent, the wind was blowing him toward the enemy beach. He thought of another pilot who recently ejected at a high altitude and had been blown to the beach and captured, but fate was on Will's side now. After landing in the water and climbing into his raft, he established radio communications with his wingman and with LCdr. Chuck Sweeney, VA-212's X.O., who was in the area and took charge as on-scene commander of the search and rescue forces.

Will was uninjured but now was facing two new problems — the growing darkness which would make rescue more difficult and the strong winds and seas which were causing him to drift ever closer to the heavily defended enemy coastline. He put out a sea anchor to slow down his drift and, while still worried, was somewhat reassured by the calm voices of the pilots of the numerous SAR aircraft from CVW-21 now in the area.

He heard and saw several enemy gun positions firing at the SAR aircraft, but these were quickly silenced by the accurate bombing of some of the A-4 SAR forces.

As he watched the bombing attack from his ringside seat, his spirits really soared when he spotted the rescue helo, *Big Mother 71*, coming his way escorted by two more A-4s. As the helo moved in for the pickup, the tenacious enemy gunners opened up with their coastal defense guns. He could see and hear the enemy shells dropping dangerously close to him and the helo. He was quite concerned. However, the A-4 pilots spotted the gun positions and managed to put the guns out of commission.

The helo, after picking Will up, returned him to the ship, still escorted by the SAR forces.

Thankfully, the *Raiders* were not involved in many SAR activities this cruise, but when they were, their professionalism paid off.

Lt. Bray on the day he counted his 300th carrier landing aboard Hancock in an A-4F Skyhawk.

Intrepid (CVS–11)

In a recent change-of-command ceremony, Rear Admiral George L. Cassell was relieved by Rear Admiral William H. McLaughlin, Jr., as Commander, Antisubmarine Warfare Group Four.

Captain Charles S. Williams, Jr., commanding officer of *Intrepid*, introduced guest speaker Vice Admiral Frederick H. Michaelis, Commander, Naval Air Force, Atlantic Fleet, to an audience of invited guests and representatives from *Intrepid* and her attached air group, CVSG-56.

Vice Admiral Fred G. Bennett, Commander, Antisubmarine Warfare Force, Atlantic, and Rear Admiral J. B. Tibbets, Commander, Fleet Air, Quonset, were guests of honor. RAdm. Cassell later relieved RAdm. Tibbets as Commander, Fleet Air, Quonset.

In November in the Tonkin Gulf, USS *Cleveland* (LPD-7) recorded her 7,000th helo landing. First Lieutenants Tim Ehly and Don Ferguson, USMC, brought their AH-1J *Cobra* gunship aboard after a combat flight against North Vietnamese coastal supply efforts. *Cleveland's* C.O., Captain William Beck, Jr., was on hand to greet the pilots. A traditional cake cutting followed the touchdown.

Lieutenants Ehly and Ferguson are pilots of HMA-369, currently embarked in *Cleveland*. The squadron's seven *Cobras* are flown and maintained by 24 officers and 104 enlisted Marines commanded by Maj. D. L. Ross. The squadron flies daily supply interdiction from *Cleveland*.

LPD-7, home-ported in San Diego, has been operating with the 7th Fleet in SEAsia since August.

TACTICAL AIR CONTROL

An officer, a radioman and a card table. Embarked in a battleship in the Aleutians during WW II, these comprised the modest beginning of tactical air control squadrons (TACRons).

Today, the squadrons are made up of 40 officers and men trained and equipped with the latest computerized air control equipment, ready to operate the complex, computerized tactical air control centers aboard amphibious flagships.

The 12 officers in each TACRon (which include one Army and one Marine liaison officer) are mostly aviators with flight experience in attack, fighter, ASW and helicopter aircraft. The enlisted men are highly trained air controllers. Everyone in the squadron has been specially indoctrinated in amphibious warfare.

In the past, TACRons have used manual air control techniques to control fighter and attack aircraft during amphibious operations. The recently introduced Amphibious Flagship Data System (AFDS), an outgrowth of the Naval Tactical Data System, has launched the squadrons into the computer age. Squadrons using the new system can now provide computerized positive radar control of all aircraft in the amphibious objective area and keep abreast of the entire amphibious landing force air picture.

Administratively, TACRons are under the control of tactical air control groups. Tactical Air Control Group One, with TACRons 11, 12 and 13, provides support to the Pacific Fleet Amphibious Force. Tactical Air Control Group Two, with TACRons 21 and 22, provides the same support to the Atlantic Fleet Amphibious Force.

TACRon 22 personnel use AFDS aboard an amphibious flagship to control several flights of close air support while coordinating helicopter and antiairwarfare operations, top. Above, an AFDS radarscope, similar to that in the Naval Tactical Data System, is manned by an air controller as a squadron officer looks on.

Exactly What They Want

I think you have an idea of what the 'scope looks like now. Do you want to go back to the front seat?" asks the flight instructor.

"You bet . . . sir," comes the response. "That's my world."

The way Ens. Bryan Burns said it over the E-1 *Tracer* intercom left no doubt. He had completed his familiarization flight in the cramped, dark seclusion of the naval flight officer's seat and was ready to go back to the big, bright world of the radar plane's cockpit — and stay there.

At the same time, on the other side of the *Tracer's* tiny aisle, Ens. Malcolm McKee kept his exercise going. As a naval flight officer in training, McKee maintained a sporadic radio commentary on "enemy" aircraft headed for the southwest tip of San Clemente Island, off the California coast. The instructor took the reports as if he were an on-scene shipboard commander directing the island's defenses.

Story and Photos by CPO Warren Grass

Both Burns and McKee were in the final stages of a 20-week course given by Airborne Early Warning Training Squadron 110, NAS North Island, the training squadron for Pacific Fleet airborne early warning squadrons.

According to LCdr. Dick Wenger, squadron operations officer, RVAW-110 trains about 30 pilots and 30 naval flight officers annually, in either the E-1 *Tracer* or the E-2 *Hawkeye*.

Even with all their training and the investment of more than a year of their lives and several thousand Navy dollars, most RVAW-110 graduates are still about a year from being fully qualified. According to LCdr. Wenger, "The pilots are essentially qualified copilots when they leave here. After an operational deployment in that job, they are generally ready to upgrade to command of carrier-based early warning aircraft."

In the case of pilots, whether *Tracer* or *Hawkeye*, it is principally a matter of hours in the driver's seat. To qualify in either airplane, a man must have a minimum of 700 pilot hours.

"It's a different ball game with E-1 naval flight officers," says LCdr. Wenger. "In the less sophisticated *Tracer*, the new NFO can wind up a combat mission all by himself after a single familiarization flight."

In the *Hawkeye*, the process is somewhat longer because of its far more sophisticated system.

Once the fledgling naval flight officer leaves the U.S. on a six to nine-month cruise, he will normally work as an air intercept communications officer. On his next deployment, six months to a year later, he'll be in charge of the E-2's three-man com-

Ensign McKee monitors the E-1 Hawkeye radar, above. At right, McKee and Burns inspect their plane prior to a flight.

puter and radar section as combat information center officer.

To do its job as a training squadron, RVAW-110 has two *Hawkeyes* and four *Tracers*. The squadron is also the scheduling agency for a pilot and tactics E-2 trainer and an E-1 tactics trainer. Both trailer-housed units belong to the Pacific Fleet Aviation Specialized Operations Training Group, also based at North Island.

When new pilots or naval flight officers check into the training squadron, their first eight weeks are devoted completely to ground training. Survival, evasion, escape and resistance training eats up a week. A day goes to deep water environmental survival training.

The young officers wind up their initial two months with classes on the systems of the aircraft they'll be flying, air intelligence and, for pilots, the ground rules for flying in the congested air space over San Diego.

Once through the early stages of training, most of the program goes back to the sky where young officers, like Ensigns Burns and McKee, wanted to be when they reported to Pensacola, Fla., for flight training more than a year before.

Not surprisingly, 12 to 14 weeks after completion of ground training, all but a minute percentage head for on operating squadron, flight orders in hand.

"It's rare that a pilot or naval flight officer trainee washes out," says assistant operations officer, Lt. John Snyder.

Once in the fleet, the newly trained pilots and naval flight officers learn something they've suspected all along. They don't know all there is to know about airborne electronic warfare.

As LCdr. Wenger puts it, "The communications capabilities of the two aircraft make us ideal as search and rescue coordinators."

He adds to that, ticking off on his fingers: air strike control, air intercept control, communications relay point and control of surface and subsurface surveillance.

Although the new pilots and naval flight officers don't have a firm grasp of all the facets of their trade at the moment they step into the fleet, the training they receive at RVAW-110 goes a long way in getting them started.

"We're able to devote full time to training," Wenger continues. "We don't have all the operational distractions found in a fleet squadron."

For nearly 20 weeks, Ensigns Bryan Burns and Malcolm McKee trained in the distraction-free environment of RVAW-110. Now they are ready for the fleet, the world of an operating squadron.

That's exactly what they want.

Crossroads of the Pacific

Naval Air Station, Agana, Guam, is a small station with a big mission. Located more than 3,000 miles west of Hawaii and about 1,500 miles east of the Philippines, Agana provides transient services to most Navy transPacific flights, coordinates search and rescue activities for over two million square miles of ocean, is home base for two major fleet squadrons and a patrol plane detachment, and serves as a major logistics and intermediate maintenance point in WestPac. Because of its strategic location, the station hosts hundreds of aircraft and crews crossing the Pacific each year.

Agana is somewhat unique as a naval air station because it also serves as Guam's international airport with PanAm, TWA and Japan Air Lines running daily jet flights to Hawaii and Japan. Air Micronesia is home-based at Agana and serves the islands of the Pacific Trust Territories, as do two small charter airlines which provide service to nearby islands.

Although NAS Agana operates only five aircraft, including two of the Navy's few remaining HU-16 *Albatrosses*, local and transient military traffic includes A-3s, A-4s, A-6s, A-7s, F-4s, F-8s, P-3s, P-2s, C-118s, C-121s, C-130s, C-141s and KC-135s. In recent months, the station has occasionally taken on the appearance of a SAC base when B-52s returning to nearby Andersen AFB have been diverted to Agana because of weather. RAF *Vulcan* and *Victor* crews also use the field as a transPac fuel and rest stop.

The Search and Rescue Center at NAS Agana is prepared to respond to emergencies occurring anywhere in

The approach to NAS Agana's runway 06, left; right and below, the station's line area.

Agana is host to myriad aircraft — military, civilian and foreign; at left is an Air Force B-52, diverted from nearby Andersen AFB. VQ-1's Constellation prepares for a logistics hop, below. The station also serves as Guam's international airport; at right, an Air Micronesia 727 sets down and, below right, an RAF Vulcan refuels prior to setting off on the last leg to Singapore.

the vast area of the Trust Territories. Emergencies in the local area are usually handled by one of the station's UH-1Ns. These twin-turbine helos have sufficient power and range to handle both sea and land rescues on Guam and nearby islands of Saipan, Tinian and Rota. In areas where the Guam jungle is too thick to make air search feasible, a Marine Corps Overland Rescue Team is used. For the outer islands of the Trust Territories, with lagoons suitable for seaplane landings, or with an airstrip, and without doctors or adequate medical facilities, NAS Agana's HU-16s are the primary rescue and medical evacuation vehicles. HU-16 flights to the distant islands are rarely routine and frequently require the utmost skill, as distances are great, navigation aids and maintenance facilities nonexistent, and harbor and runway conditions routinely require JATO. For the many inhabited islands in the Trust Territories not served by commercial airlines, NAS Agana remains the sole means of medevac.

NAS Agana also has its own fleet — a 64-foot crash boat used during seaplane operations in Apra harbor and for surface search and rescue operations in adjacent waters.

When circumstances are such that Agana cannot respond to SAR requests with its own aircraft, the joint search and rescue coordination center turns to one of the local Navy tenant squadrons or to Andersen AFB. Interservice SAR cooperation is outstanding.

Another Agana service, performed primarily by the operations department, is air logistic support for fleet operations in the Western Pacific. *Hafa Adai*, the station's C-121 *Constellation*, is utilized for this mission. The aircraft's name, in the language of the native Guamanian, Chamorro, is a greeting.

While many of Agana's personnel are busy with transient aircraft, search and rescue, and logistic flights, others devote their time to providing fleet support services. One of the major departments providing support is the aircraft intermediate maintenance department. In addition to normal intermediate level maintenance functions, it provides complete engine repair for J-57 and TF-30 jet engines, intermediate repair for T-56 turboprop engines, and engine buildup for reciprocating R-3350s and R-1820s. A propeller buildup capability is also maintained for the C-130, C-121, P-3 and HU-16. The avionics division also has complete facilities for servicing P-3A/B/Cs.

Other support facilities at Agana include a fleet air photographic laboratory, a calibration lab and a Fleet Aviation Specialized Operational Training Group, Pacific detachment. Aviation supply support is provided by the Naval Supply Depot, Guam, and medical services by the Guam Regionalized Naval Medical Center.

Although the Coast Guard no longer has aircraft on Guam, it maintains a hangar which is used as a shipment point for supplies being flown to its Loran detachments in the outer islands and as an administrative head-

NAS Agana's HU-16D Albatross is anchored off Pagan Island during a rescue mission. At right, one of the station's SAR UH-1Ns waits for an accident victim. On opposite page is an overview of the air station with an old Japanese airfield at lower right.

quarters for Coast Guard activities on Guam.

Tenant squadrons at Agana include Fleet Air Reconnaissance Squadrons One and Three and a patrol squadron detachment. The VP detachment is tasked with numerous operational missions ranging from antisubmarine warfare and aiding NAS Agana SAR efforts to island surveillance — patrolling the surrounding islands to check for possible signs of distress and for activity which might infringe on the rights of the citizens of the Trust Territories.

Maintaining a 24-hour-a-day ready alert status taxes the VP Det to the limit but getting airborne quickly, on short notice, is a vital requirement in both ASW and SAR operations.

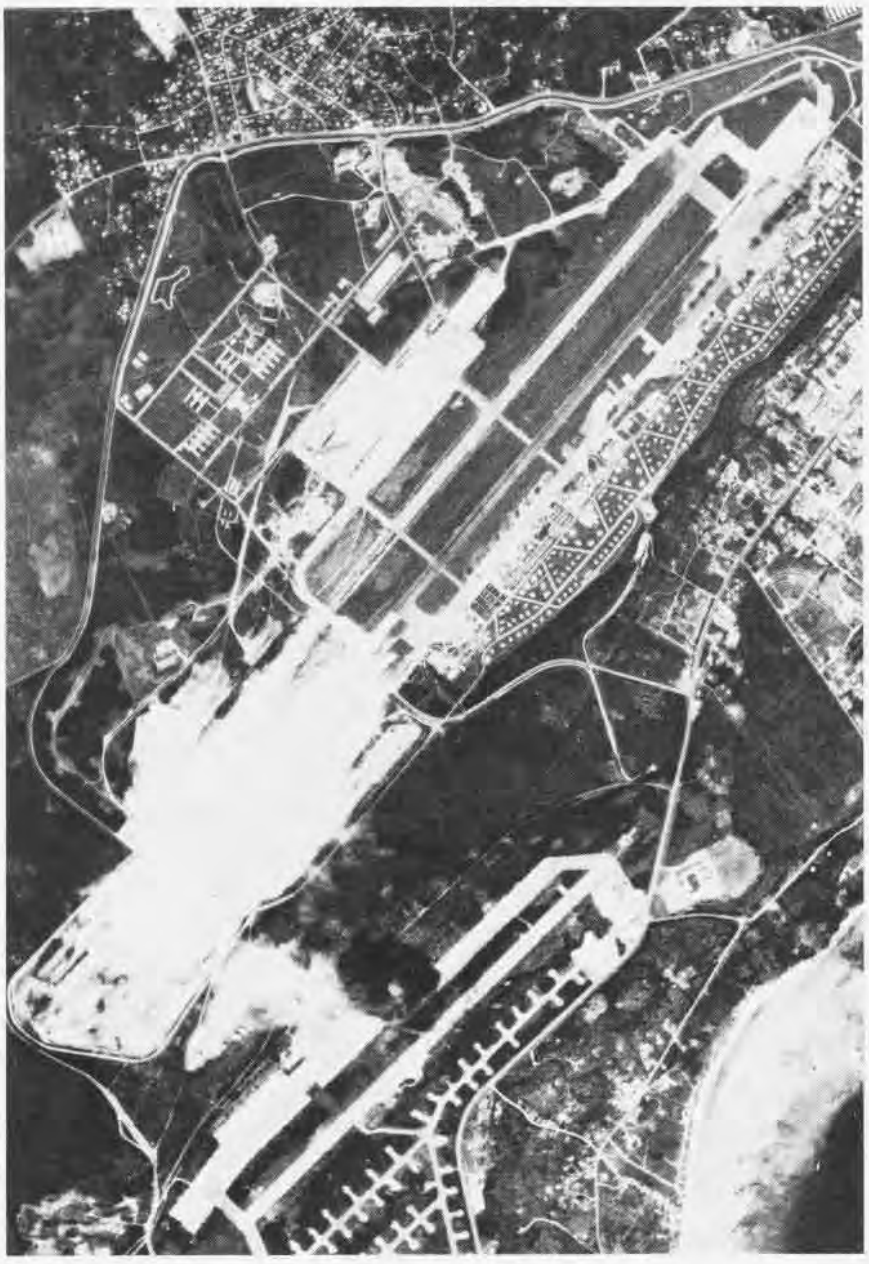
VQ-1 was relocated to Guam from Japan in June 1971, at that time adding to its electronic reconnaissance mission two others: weather reconnaissance and aerial photography in-

herited from Airborne Early Warning Squadron One and Heavy Photographic Squadron Sixty-One. For a brief time after its arrival on Guam, VQ-1 shouldered the job of typhoon and weather reconnaissance from the international date line to the Malay peninsula, but this mission was discontinued at the end of the 1971 typhoon season. The squadron has, however, retained the photographic reconnaissance mission which it performs with former VAP-61's RA-3B *Skywarriors*. The squadron boasts that it is now the only Navy organization with advanced worldwide photographic and cartographic mapping capabilities (*NANews*, October 1972, cover 3).

The primary mission of VQ-1 is to conduct electronic reconnaissance missions in support of fleet operations, obtaining information and intelligence on areas and targets of naval interest. VQ-1 uses EA-3B and RA-3B *Skywarriors*, the EP-3 *Orion* and EC-121 *Constellation*. VQ-3 uses specially modified C-130 *Hercules* to provide a link in the communication chain with undersea deterrent forces.

Available to personnel at NAS Agana today are modern shopping centers, restaurants, night clubs and hotels, including the recently completed Guam Hilton. The island, a fascinating blend of the old and the new, has become a favorite spot for tourists.

As it says in the travel folder, "Guam is Good" and NAS Agana helps make it so.



Letters

Tell it to the Marines

I was a little late receiving my copy of *Naval Aviation News* for October 1972, and I am actually glad it was late. Your article on cryogenics, page 17, made my blood FREEZE.

The photos which are shown are a fine example of how not to do the job, or four accidents looking for a place to happen. Start with the two men filling the spin cart. First, the man on the liquid has no face shield, and the man with his foot on the cart has no gloves. Great frozen eyeballs and fingers! In the second picture of the liquid nitrogen cart, the face shield is not for the top of the head! Last, but not least, is the man with two accidents. If the LOX converter were filled, he might get a hand or face full from the relief valve, seeing that he is looking right into the valve. Then what happened to the gaseous 02 bottle that fell and broke its neck? Holy Missile! I wonder if their safety officer was present?

Frozen in Terror
PR2 J. W. Vinyard
VS-35
NAS North Island, Calif. 92135

In the interest of aviation safety the following comments are submitted relative to the article "How Cold is Cold" on page 17 of the October 1972 issue of *Naval Aviation News*.

In the top left picture, the operator is not wearing a face shield and the line on the LOX cart is kinked. In the top right picture, the operator's face shield is not down and, in the bottom photo, the supervisor is displaying a converter while standing alongside *two unsecured* cylinders.

Although the material is of interest, the obvious safety violations detract from the article.

R. H. David, Cdr.
Assistant Force Safety Officer
ComNavAirPac

MOBS

I enjoyed the MOBS article in the October 1972 issue of *NANews* but recall an item in the book *The Secret War* by Gerald Pawle (Publisher: William Sloane Assoc., copyright 1957). Seems the WW II British R&D Group DMWD (Directorate of Miscellaneous Weapon Development) that is the subject of the text proposed, built and tested a similar afloat concept using plywood "Benzene" ring structures (hexagons) attached along the six sides into a large afloat airfield. As I recall, there is a photo of a propeller-drive aircraft operating from the mobile field, which was towed to sea by a tug. So, what's new?

Another item of interest is that the foreword to the book was written by Lt. Nevile Shute, who was a member of the group as a reserve officer during WW II.

C. N. Straney, Cdr.
Naval Base
Newport, R.I. 02840

Cougars

After reading Mr. McDonell's excellent interview with Dr. Perrone concerning crash survivability and re-reading "Grampaw Pettibone" in the October 1972 issue of *Naval Aviation News*, it seems to me that the best way to increase crash survivability would be to design all future aircraft like the TF-9J *Cougar*.

D. R. French, Capt., USMCR
VMGR-252
MCAS Cherry Point, N.C. 28533

Memo to the Editor

At a recent meeting of the Early and Pioneers of Naval Aviation, some commented on my two articles in the March issue of *NANews*. They thought that I should have given more details and the names of participants in various events. It seems that there is always a desire to establish positively the various firsts.

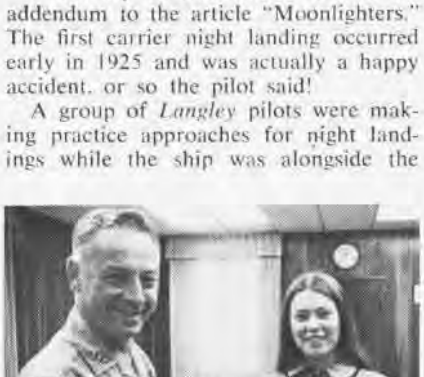
I will try to establish a few as an addendum to the article "Moonlighters." The first carrier night landing occurred early in 1925 and was actually a happy accident, or so the pilot said!

A group of *Langley* pilots were making practice approaches for night landings while the ship was alongside the dock at San Diego. Only approaches (no landings) were to be made.

Lt. H. S. (Hap) Brown made an approach and as he was about to give it the gun and go around for another run, the engine faltered and the plane stalled in the exact position to complete a perfect landing on #1 wire. Hap swore it was an accident but must nevertheless be credited as the *first* night carrier landing, even if it wasn't scheduled.

The first scheduled landing at night underway was made by Lt. John Dale Price in a single-seat TS-2 fighter off Point Loma. In the same formation that night, making landings, were Lieutenants A. W. (Jake) Gorton, R. D. (Rossmore) Lyons and D. L. (Del) Conley. This was in the summer of 1925.

J. R. Tate, RAdm., USN (Ret.)
Villa Cote d'Azur One
Orange Park, Fla. 32073



Mrs. Charles E. Parker III and VAdm. M. W. Cagle, CNT, display Naval Aviation Museum Association plaque, a tribute to Mrs. Parker's husband. VT-6 donated $1,000 to the museum fund in memory of Ltjg. Parker who was killed in an aircraft accident last September.

Safety

I am an avid reader of your fine magazine and the front cover of the September 1972 issue is a beautiful piece of photography.

However, we all know that things can go to hell in a hurry on a landing — especially in a shipboard environment. Being an ex-tail hooker and temporary carrier black shoe, I was taught and have always preached and practiced that eternal vigilance is the price of safety. This applies in the landing area at sea or ashore as well as in the air.

I wonder if Grampaw Pettibone goes along with the relaxed atmosphere as depicted.

F. D. Goetschius, Capt.
C.O., VR-21
FPO San Francisco 96611

Grampaw Pettibone says:

Jumpin' Jupiter! No. I don't go along with the relaxed atmosphere. I have no way of identifying the color of those fellas' shoes, but the captain's keen eye emphasizes a good point. With LAMPS here and the sea control ship around the corner — let's look alive to stay alive, no matter what type of landing deck we're on.

'Black Cats'

I would like to take this opportunity to thank you for the fine article on the *Black Cats* that appeared in the June issue of *Naval Aviation News*. It is one phase of Naval Aviation history that has been left uncovered for too long. I hope to see more about this gallant group of Naval Aviators.

B. R. Jackson
17560 Blythe
Northridge, Calif. 91324

HS-2 will celebrate its 21st birthday on March 7. With primary mission of ASW, the squadron also flies SAR, plane guard, personnel transfer and mail operations — and is involved in evaluating new antisubmarine warfare concepts. Based at NAS Imperial Beach, HS-2 is led by Cdr. R. L. Barton.

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